THE EFFECTS OF A VOCATIONAL EXPLORATION GROUP PROGRAM WITH MIDDLE AND HIGH SCHOOL STUDENTS

By

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TABLE OF CONTENTS

Page

ACKNOWLEDGMENTS ii

LIST OF TABLES v

LIST OF FIGURES. vii

ABSTRACT viii

CHAPTER

I INTRODUCTION. 1

  Purpose of the Study 2
  Need for the Study 2
  Definition of Terms. 4
  Organization of Remainder of Study . . . 5

II REVIEW OF THE RELATED LITERATURE. 6

  Vocational Maturity. 6
  Models for Facilitating Career Development. 12
  Group Counseling 27
  Vocational Exploration Group 43

III METHODS AND PROCEDURES. 52

  Hypotheses 52
  Population and Sample. 55
  Design of the Study. 59
  Vocational Exploration Group Program . . 62
  Instruments. 66
  Collection of the Data 71

IV ANALYSIS OF RESULTS 74

TABLE OF CONTENTS (continued)

CHAPTER Page

V SUMMARY, DISCUSSION, LIMITATIONS, AND RECOMMENDATIONS 102

Summary. 102
Discussion 105
Limitations. 110
Recommendations. 113
Conclusions. 115

APPENDICES

A VOCATIONAL EXPLORATION GROUP TASKS. 117

B EMPLOYABILITY PERCEPTIONS INVENTORY 119

C REPORT ON NEXT STEP 121

REFERENCES 122

BIOGRAPHICAL SKETCH. 131

LIST OF TABLES

TABLE Page

1 TECHNIQUES FOR ASSISTING VOCATIONAL LIFE-STAGE TRANSITIONS 21

2 TUCKMAN'S STAGE 6: SELF-DETERMINATION--GRADES 7-8. 22

3 TUCKMAN'S STAGE 7: MUTUALITY--GRADES 9-10. . 24

4 TUCKMAN'S STAGE 8: AUTONOMY--GRADES 11-12. . 25

5 F-VALUES FOR MULTIVARIATE ANALYSIS OF VARIANCE FOR POST-TEST SCORES WITH TWO-WAY INTERACTIONS. 76

6 F-VALUES FOR MULTIVARIATE ANALYSIS OF VARIANCE FOR DIFFERENCE SCORES WITH TWO-WAY INTERACTIONS. 78

7 ANALYSIS OF VARIANCE OF POST-TEST SCORES FOR CMI 80

8 MEANS AND STANDARD DEVIATIONS FOR CMI POST-TEST SCORES 83

9 ANALYSIS OF VARIANCE OF EPI-1 POST-TEST SCORES. 84

10 MEANS AND STANDARD DEVIATIONS FOR EPI-1 POST-TEST SCORES. 87

11 ANALYSIS OF VARIANCE OF EPI-2 POST-TEST SCORES. 88

12 MEANS AND STANDARD DEVIATIONS FOR EPI-2 POST-TEST SCORES. 91

13 ANALYSIS OF VARIANCE OF EPI-E POST-TEST SCORES. 92

14 MEANS AND STANDARD DEVIATIONS FOR EPI-3 POST-TEST SCORES. 95

LIST OF TABLES (continued)

TABLE Page

15 ANALYSIS OF VARIANCE OF CMI DIFFERENCE SCORES. 96

16 MEANS AND STANDARD DEVIATIONS FOR CMI DIFFERENCE SCORES 97

17 NONPARAMETRIC ANALYSIS OF VARIANCE FOR "NEXT STEP" RESPONSES 99

18 PERCENTAGES OF "YES" AND "NO" RESPONSES ON "NEXT STEP" 101

LIST OF FIGURES

FIGURE Page

1 SUBJECT ASSIGNMENT FOR ONE HIGH SCHOOL WITH ONE VEG LEADER. 57

2 DISTRIBUTION OF SUBJECTS (N=660) IN MIDDLE AND HIGH SCHOOLS. 60

Abstract of Dissertation Presented to the Graduate Council
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This study assessed the effects of a Vocational Exploration Group (VEG) experience on the career maturity attitudes, employability perceptions, and exploratory career behaviors of middle and high school students. Five major hypotheses were tested examining the effects of the VEG experience on five dependent variables: career maturity attitudes as measured on the attitude scale of Crites' Career Maturity Inventory (CMI); job personalization as measured on subscore 1 of Daane's Employability Perceptions Inventory (EPI-1); active movement toward job personalization as measured on subscore 2 of the EPI (EPI-2); awareness of work potential and aspiration as measured on subscores 3 of the EPI (EPI-3); and frequency of exploratory career behaviors as defined by the number of students reporting that they did take their "Next Step," a follow-up behavior to the VEG session.

In addition four subhypotheses were tested for each major hypothesis examining the effect of four independent variables on VEG participants' and control subjects' scores on the criterion variables. These were race, sex, grade level, and pre-tested status.

Data were collected for a sample of 422 eighth-, tenth-, and twelfth-grade students in the public schools of Alachua County, Florida. All subjects were randomly selected and assigned to an experimental or control group. These groups were then randomly subdivided into pre-tested and nonpre-tested groups resulting in a Solomon-four group research design. Those subjects selected for pre-testing were administered the CMI and EPI during the first week of the study. During the second week all experimental subjects participated in a two-and-one-half hour VEG program based on eighteen specific tasks as outlined in the VEG leader's manual. During the fourth week all subjects were administered the same forms of the CMI and EPI. In addition VEG participants were asked to complete a questionnaire asking them about their "Next Step" and whether or not they had taken it.

Multivariate analysis of variance followed by separate univariate analyses of variance for each of the first four criterion variables was performed both on the post-test scores of all subjects and on the difference scores from pre- to post-testing of the 211 subjects who were pre-tested. Two-way interactions of treatment group with race, sex, grade level, and pre-tested status were simultaneously investigated.

Reported frequencies of "Yes" responses to the question "Did you have a chance to take your 'Next Step'?" were analyzed with a nonparametric analysis of variance including all two-way interactions of sex, race, grade level, and pre-tested status.

Analysis of post-test results produced a significant interaction of treatment group with race on the EPI-3 at the .05 level of confidence. Analysis of difference scores produced a significant interaction of treatment group with sex on the CMI at the .05 level of confidence although the difference was not considered practically significant. Differences between sexes and races occurred unsystematically throughout the analyses.

No differences or interactions between groups were found in the analysis of "Next Step" frequencies for any of the dependent variables. Thirty-four percent of the VEG participants reported taking their "Next Step" within two weeks of the VEG session.

The author concluded that VEG appears to have some unsystematic but positive effects on the career development of middle and high school students, and that these effects

are more easily seen in small step measures such as changes in self-perceptions (as on EPI-3) and immediate behaviors. The short-term VEG session does not appear to have a practical effect on larger developmental variables such as career maturity. Sex and race appear to be important factors to consider in conducting further research with VEG as a treatment.

CHAPTER I

INTRODUCTION

In the last fifteen years theories in vocational counseling have changed from perceiving career as a static choice to viewing it as a developmental process. A developmental conception of career gives greater focus to an individual's processes of developing, deciding, and adapting to change. There is much theorizing and some research on career development in the literature, including efforts to operationally define elements of career development. There is less, however, which identifies guidance activities that facilitate the processes of career development.

Counseling and guidance are seen as integral parts of a career education program, which has emerged as a major approach and responsibility of the public schools at all grade levels. While such a concept enhances the developmental role for school counselors in all guidance areas, counselors at the secondary level are handicapped by a limited number of well-researched counselor activities for facilitating career development. Secondary school career guidance tends to follow the traditional patterns of test, talk, and place. This study investigated one developmental group technique for occupational and vocational exploration with middle and high school students.

Purpose of the Study

The purpose of this study was to measure the effects of a small group vocational exploration experience on three aspects of the career development of eighth-, tenth-, and twelfth-grade students in public school. The following questions were investigated:

1. What effect does a small group vocational exploration experience have on participants' career choice attitudes?

2. What effect does a small group vocational exploration experience have on participants' employability perceptions of the world of work and self?

3. What effect does a small group vocational exploration experience have on participants' frequency of initiating exploratory career-goal-directed behaviors?

Need for the Study

Counselors need to involve themselves more effectively with the career development process of their students. The current mandate for career education in public schools extends from the top levels of federal government down to the local concerns of parents and community. The state of Florida, for example, has recognized the need for effective guidance and career education by initiating pilot career education programs around the state involving teachers and counselors and by instituting the paraprofessional position of the Occupational Specialist.

Counselors are faced with large counselor/student ratios. They have many and diverse responsibilities. Few have developed effective group techniques for assisting students in career development. Many counselors have not had formal training in group counseling, which is one way of coping with large counseling loads. Even with training, replicable group career counseling models with significant outcomes are scarce in the literature.

Vocational Exploration Group (VEG) is a structured model for facilitating world-of-work and self exploration in a small group context. The experience is designed to encourage creative thinking, increase personal motivation, and widen the participants' pool of occupational knowledge. Both the group experience and the group leader's training are standardized and accomplished in a minimal amount of time.

Most of the outcome research with VEG has been with young unemployed adults seeking jobs. Assessment of the effects of the experience has focused on changes in the characteristics of that particular population, as well as their decisions and consequences. Only three studies have been completed with high school students. These studies produced minimal or no significant outcomes. No research has been done across grade levels with large samples of public school students to determine possible effects on their career development.

Even though supportive data for VEG effectiveness with adolescents is not available, school counseling programs are beginning to include VEG among their career counseling activities. Subjective evaluation of the VEG by counselors and students is generally very positive. More objective and systematic evaluations of the experience and specific outcomes, however, are needed.

Definition of Terms

In this study, the following definitions were used.

Student -- any child or adolescent registered in a regular public school program except those exceptional student programs for the educable mentally retarded, emotionally disturbed, or socially maladjusted as identified by state of Florida guidelines.

Career development -- the life-long continuous process of implementing one's self-concept within the context of the world of work and society. This process occurs in stages and is a function of the individual's environment, interests, attitudes, abilities, values, and behavior patterns.

Vocational maturity -- the attained point in a person's career development as compared to peers.

Employability perceptions -- the degree to which one sees himself as employable including awareness of job personalization factors, active involvement in job personalization, and awareness of work potential and aspiration.

Organization of Remainder of Study

A review of the literature providing a rationale for the study is presented in Chapter II. In Chapter III the experimental hypotheses, experimental design, treatment procedures, and the criterion instruments are discussed. The results of the study are reported in Chapter IV. Chapter V includes a summary and discussion of the results, limitations of the study, and recommendations.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

The review of the literature related to this study will focus on the following areas: (1) vocational maturity as a measure of career development; (2) models for facilitating career development through guidance; (3) group procedures for facilitating career development; and (4) Vocational Exploration Group.

Vocational Maturity

Developmental Stages

Career development is a life-long process and generally moves toward more complexity and specificity with age (Super, 1960). Career development occurs in stages that build somewhat on each other and within each stage the individual must cope with certain tasks. Super (1971) discussed vocational development within the context of five life stages: growth, exploration, establishment, maintenance, and decline. Within these five stages the individual is confronted with the five tasks of crystallization, specification, implementation, stabilization, and consolidation. Each of these developmental tasks requires the individual to have certain attitudes and behaviors.

Ginzberg (1951) described three main stages in career development: fantasy, tentative (including interest, capacity, and value), and realistic (including exploration, crystallization, and specification) stages. Havighurst (1964) described vocational development in terms of developmental tasks: identifying with a worker (ages 5-10), acquiring the basic habits of industry (ages 10-15), acquiring identity as a worker in the occupational structure (ages 15-25), becoming a productive person (ages 25-40), maintaining a productive society (ages 40-70), and contemplating a productive and responsible life (ages 70+).

Definitions of Vocational Maturity

An individual's vocational maturity is an indication of the level he has reached in his particular career development. Movement through the career process can be successful or unsuccessful, mature or immature. Progress in development can be measured or evaluated, and, within certain given conditions, facilitated (Super, 1957). The development of vocational behavior through different life stages may be evaluated by assessing the vocational maturity of the individual and vocational maturity can be operationally defined several ways.

Absolute or relative definitions. Super identified indices of vocational maturity as attitudinal and behavioral tasks within life stages (Super, 1960). He then described vocational maturity with these indices using either the individual's age or coping behaviors as a reference point. Two resulting definitions of vocational maturity were: (1) the life stage an individual is actually in as evidenced by the developmental tasks he is coping with compared to his expected stage in terms of age and (2) the maturity of his task behaviors in his actual life stage compared to others in the same stage regardless of age. A third definition of vocational maturity in terms of vocational adjustment was defined in terms of whether the individual's vocational behaviors result in successful long-term goal satisfaction.

Degree or rate definitions. Crites (1961) criticized definitions of vocational maturity because a person might be considered mature by one definition and immature by another. He recommended combining definitions to give a measure of degree and of rate of vocational maturity. Degree is defined by age differentiating measures drawn from a pool of appropriate vocational behaviors and task coping indices using the oldest members of the group as criterion. A measure of rate of vocational maturity is found by comparing an individual's degree to peer norms.

Definitions of vocational maturity vary and are still debated (Bartlett, 1971; Norton, 1970; Westbrook & Cunningham, 1970). The definition drawn upon in this study was the Crites' degree and rate method.

Indices of Vocational Maturity

Another area of variation in career development theory, primarily due to varying research projects and the early stage of research investigations, is the indices that comprise vocational maturity measurement. Vriend (1969) concluded after studying high school seniors that the more vocationally mature students (1) knew more about themselves and occupations, (2) took more actual steps toward work or continued education goals, (3) participated in more activities in and out of school, (4) had more real work experience, (5) had higher vocational aspirations, (6) had more personal confidence, (7) made better grades in school, and (8) had more positive attitudes toward their vocational goals.

Super's indices. Super (1960) listed five dimensions of vocational maturity: orientation to vocational choice, information and planning about the preferred occupation, consistency of vocational preferences, crystallization of traits, and wisdom of vocational preferences. Each dimension had two or more indices of vocational maturity associated with it. After studying ninth-grade boys in his

Career Pattern Study, he found four indices which seemed to comprise one factor of use with that population: planning orientation.

Gribbons' and Lohnes' indices. Gribbons and Lohnes (1968) developed eight scales to measure readiness for vocational planning: factors in curriculum choice, factors in occupational choice, interests, values, independence of choice, verbalized strengths and weaknesses, accuracy of self-appraisal, and evidence for self-rating.

Crites' indices. Crites (1973) defined four dimensions of career maturity: consistency of career choices, realism of career choices, career choice competencies, and career choice attitudes. Planning included problem solving, planning, occupational information, self-appraisal, and goal selection. Attitudes included involvement, orientation, independence, preference, conception.

Westbrook's and Mastie's indices. Westbrook and Mastie (1973) identified six areas of cognitive vocational maturity: fields of work, job selection, work conditions, education required, attributes required, and duties.

Correlated factors. Other studies have correlated vocational maturity with decision-making skills (Dilley, 1965), sex (Hollender, 1971; Smith & Herr, 1972), intelligence, achievement, and participation in extracurricular activities (Dilley, 1965; Mathewson & Orton, 1963), and socioeconomic status (Ansell & Hansen, 1971). The career development of women and of lower socioeconomic groups is particularly differentiated by the different social/cultural conditions and available opportunity structure for work and career associated with these groups (Super, 1970; Ginzberg, 1970).

Most of Super's original dimensions and indices are included in the various measures developed by other researchers. In general, vocational maturity seems to be indicated by (1) knowledge of both self and the world of work, (2) attitudes toward vocational goals such as Super's "planning orientation," (3) decision-making skills, (4) realism, and (5) activity.

Further Research Needs

Research is still needed both in defining vocational maturity constructs and in developing and validating instruments for measurement (Crites, 1971; Westbrook & Cunningham, 1970; Westbrook & Mastie, 1973). Crites (1971) listed four types of research needed in the area of vocational maturity: survey research (for stronger definitions), theoretical research (for hypothesis testing), techniques research (for measurement), and applied research (for effective facilitation). The question of what are effective facilitators of vocational maturity is particularly significant to practicing counselors. Morrill and Forrest

(1970) recently stressed the "need for descriptions of counseling practice which reflect more adequately current developmental thinking about career counseling" (p. 299).

Models for Facilitating Career Development

Student Need

American College Testing Corporation survey. That assistance with career development is needed by adolescents is apparent both in concerns of employers, educators, and parents and in the expressed needs of adolescents themselves. In the 1973 American College Testing Corporations nationwide study of student career development, nearly 30,000 eighth-, ninth-, and eleventh-grade students were surveyed on their occupational awareness, self awareness, and career planning attitudes and activities (Prediger, Roth & Noeth, 1973). A major finding of the survey was that a wide discrepancy existed between the need for career help and the help the students were receiving.

When asked to check areas they would like help in, 73 percent of eighth graders and 78 percent of eleventh graders indicated they desired help in "making career plans." Less than 10 percent of eighth graders and 40 percent of eleventh graders scored three-fourths or more questions correctly in a survey of knowledge about occupational preparation requirements. Yet, only 12 percent of eleventh graders and 15 percent of eighth graders indicated that they did not know how to prepare for or enter the job of their choice. Less than half of the eleventh graders and approximately 15 percent of the eighth graders scored three-fourths or more questions correct on an occupational knowledge questionnaire which included questions on satisfactions, interests, values, and preparation requirements related to different jobs.

In the area of "career planning knowledge," students were asked both attitudinal and factual knowledge questions. Only about 32 percent of eleventh and 8 percent of eighth graders answered three-fourths or more of the questions correctly. Involvement in exploratory occupational experiences was rated from high to low involvement based on frequency of reported activities. About 4 percent of eleventh graders were rated as being highly involved. Less than 30 percent more were rated average.

In contrast, when students were asked questions about "career planning activities," only about 3 percent had high involvement and less than 50 percent average involvement. On a specific response to whether they had talked with a counselor or teacher about how their goals, interests, and abilities related to jobs, only 9 percent of eighth graders and 20 percent of eleventh graders had done this more than once or twice. A full 64 percent of eighth and 42 percent of eleventh graders reported that they had not talked with a counselor or teacher. When asked to rate "discussion with a counselor about education and job plans for after high school" on degree of helpfulness, only 10 percent of eighth and 15 percent of eleventh graders rated such discussions as "a lot of help." "Help not provided/used" or "of little help" accounted for 74 percent of eighth graders' and 56 percent of eleventh graders' responses. In an overall rating of "how much help with career (educational and job) planning has your school (teachers, counselors, principal, librarian, etc.) given you," 56 percent of eighth and 49 percent of eleventh graders indicated "little" or "none" even though only 19 percent of eighth graders and 3 percent of eleventh graders said their counselor was not usually or always available to them.

Despite twenty years of theory building, research, and discussion of career development in the professional literature, the need for assistance on the part of those actually experiencing the formative stages of the proces still exists. Apparently counselors and schools are not providing this assistance.

Problems in Vocational Counseling

Wrenn. Ten years before the ACT Survey, Wrenn (1963) expressed concern over the lack of apparent emphasis on vocational counseling in the public schools. He listed several possible reasons for the deemphasis. The field is getting more complex and difficult to master and more complex types of counseling are needed to integrate attitudes and aptitudes with occupational information. There are increasing demands on the role of the school counselor. In addition, a misconception exists that the most worthwhile kids go to college and therefore do not need vocational counseling. Finally, subtle snobbery sometimes places a greater status on personal counseling. Wrenn's recommendations for changing the situation included an emphasis on vocational development rather than simple choice. He also emphasized that students should be prepared for flexibility in the future, and choosing a vocational style was more important than choosing an occupation.

Hansen and Borow. Ten years later Hansen and Borow (1973) again listed problem circumstances which prevent adequate vocational counseling: (a) limited counselor time for direct work with students, (b) narrow and outmoded views of guidance by students, making them poorly prepared to benefit from it, (c) overemphasis on specific choice rather than developmental and motivational aspects of planning, (d) counseling assumptions of a single-job-for-life rather than a series of choices within a career,

(e) overemphasis on testing and test interpretation, (f) job content of occupations stressed over psychosocial and life style characteristics, (g) inadequate linkages between counseling and education, training, placement, job adjustment, and follow up, (h) disproportionate emphasis on short-term "crisis counseling," (i) disproportionate amount of time and emphasis given to college-bound, (j) relatively few student reports that counselors had an important influence on their career planning, and (k) few evaluation studies of career counseling outcomes with limited support for career counseling.

Recommended Approaches

Several authors have described new approaches in developmental vocational guidance services. Recommendations generally include involving the client and his processes of relating himself to the world of work more directly in the counseling process.

Super. In an early discussion of career counseling Super (1957) described a six-step model for vocational counseling which included self-exploration: (1) nondirective problem exploration and self-concept portrayal; (2) directive topic setting, for further exploration; (3) nondirective reflection and clarification of feeling for self-acceptance and insight; (4) directive exploration of factual data from tests, occupational pamphlets, extracurricular experiences, grades, etc., for reality testing; (5) nondirective exploration and working through of attitudes and feelings aroused by reality testing; and (6) nondirective consideration of possible lines of action, for help in decision making (p. 308). Super's six-step model works back and forth between the person's affective world and the world of occupations.

Pritchard. Pritchard (1962) called for an approach in vocational counseling which included not just occupational and personal information but more the actual processes involved in interrelating the two. He listed four formulations needed to encourage "self-at-work" exploration within the counseling process:

> 1. We must seek to obtain, develop, and use occupational tools sensitive to the expanded kinds of variables, occupational as well as personal, identified as significant to vocational development, success, and satisfaction.
> 2. Occupational exploration should generally give precedence to the broader and longer view of progressive vocational planning over the more limited view of a one-time, final occupational choice.
> 3. Self-exploration and occupational exploration should become more fully correlative processes.
> 4. The systematic search for positive vocational suggestions should be based on the particular kinds of personal-vocational factors and relationships explicitly hypothesized as significant in the individual case and should contribute to the modification and verification of these hypotheses. (1962, pp. 676-678)

In addition, Pritchard makes recommendations about forms used in counseling: they should not restrict counseling to a single standard of occupational classification, should not imply one specific choice as the expected outcome of counseling, should encourage the formation of occupational hypotheses for each individual counselee, should provide a working tool to stimulate exploration, and should record the nature of the decisions or courses of action taken with further plans.

Morrill and Forrest. In assessing career counseling, Morrill and Forrest (1970) describe four types utilizing concepts of career development and career process:

> Type 1. Counseling which aids the client with a specific decision by providing information and clarification and issues.
>
> Type 2. Counseling which aids the client with a specific decision by focusing on decision-making skills rather than only on the decision at hand. This has application for the specific situation as well as later choice-points.
>
> Type 3. Counseling which views career as a process rather than an end-point toward which all decisions lead. Thus, the focus changes from the objective of making the correct ultimate choice and once-and-for-all pronouncement of identity to the process of making a continual series of choices.
>
> Type 4. Career process counseling which focuses on creating in the individual the ability to utilize his personal attributes to achieve self-determined objectives and to influence the nature of future choices rather than merely adapt to external pressures. (pp. 299-300)

Other authors have emphasized the need for counseling to include affective levels of client involvement. Healy (1974) stressed the need to teach attitudes and affective skills for vocational development. Tuckman (1973) listed four developmental stages in the affective domain for career exploration: introspection/experiencing, orienting, valuing, and implementing. Brown, Feit, and Forestandi (1973) indicated the need to help students understand themselves as one stage in facilitating vocational development.

For all of the above authors, there exists a definite need to include the client's affective world and individual perceiving process in any model of vocational counseling.

Developmental Guidance Models

Since career development is a maturation process through successive stages or tasks, different goals and techniques for facilitating career development would logically be appropriate at different levels of maturity. The goals and subgoals of guidance can be specifically inferred from the developmental tasks at each stage (Zaccaria, 1965). Several authors have attempted to define career guidance models appropriate to developmental stages.

Hershenson. Hershenson (1969) conceptualized the vocational development process in five life-stages and then drew upon counseling theory orientations to suggest appropriate kinds of assistance for transitioning from one life-stage to another. His model is outlined in Table 1.

Tuckman. Tuckman (1974) is more specific in outlining developmental stages along vocational (Ginzberg), ego (Erickson), and cognitive (Piaget) dimensions. For each developmental stage as defined by grade level, he gives the major orientation of that stage; the conditions necessary for progress through the stage; and the themes needing focus and appropriate media for such focus in the areas of self-awareness, career-awareness and career decision making. Tables 2, 3, and 4 illustrate the model for grades 7 and 8--the stage of self-determination, grades 9 and 10--the stage of mutuality, and grades 11 and 12--the stage of autonomy. Tuckman's model encompasses all aspects of career education including teacher, counselor, and community facilitators.

Miller. Miller (1971) focuses specifically on seven guidance techniques appropriate to career guidance of students at different ages. The seven basic guidance methods are behavioral approaches, educational media, computer assisted counseling, group procedures, information

TABLE 1

TECHNIQUES FOR ASSISTING VOCATIONAL LIFE-STAGE TRANSITIONS

Stages	Transitional Procedure	Transitional Concept	Assistance Techniques: Facilitation	Assistance Techniques: Remediation	Prototype Theorist or School
Social amniotic					
↓	Determining program (set)	"me"	Life style analysis	Environmental manipulation; psychotherapy	Adler
Self-differentiation					
↓	Information input	"go-versus-no-go"	Guidance	Skill training	Trait-and-factor
Competence					
↓	Information processing	"go-versus-go"	Content: Process:	Client centered Training in decision-making	Rogers Tiedeman Krumboltz
Independence					
↓	Information utilization	"application"	Intrapsychic: Situational:	Existential Job matching	Frankl Beck Herzberg
Commitment					

Source: Hershenson, 1969, p. 778.

TABLE 2

TUCKMAN'S STAGE 6: SELF-DETERMINATION--GRADES 7-8

Major orientation toward	Ginzberg	Erikson	Piaget	Necessary for progression
Being able to exercise control over one's fate; need for a sense of self	Tentative (capacities)	Identity vs. role diffusion (Who am I?)	Concrete operations-formal operations	1. Opportunity to decide on one's own behavior 2. Freedom to challenge authority and tradition 3. Encouragement to relate

TABLE 2 (continued)

	Self-awareness	Career-awareness	Career decision-making
Themes	1. Examination of skills and competencies 2. Examination of aptitudes	1. Value of work 2. Job clusters	1. Means-end cognizanze 2. Mock choosing
Media	1. Test-taking 2. Making things	1. Research 2. Hands-on	1. Simulations
Sample units	1. How can we find out what our skills and aptitudes are? 2. American Industries Program: research and construction of the processes of production 3. Simulation: choosing the means to achieve desired ends.		

Soutce: Tuckman, 1974, p. 205

TABLE 3

TUCKMAN'S STAGE 7: MUTUALITY--GRADES 9-10

Major orientation toward	Ginzberg	Erikson	Piaget	Necessary for progression
Being able to establish meaningful relationships with others; need for social norms and acceptance	Tentative (values)	Intimacy vs isolation (Who are we?)	Formal operations	1. Establishment of relationships 2. Peer group identity 3. Desire and support to learn and grow

	Self-awareness	Career-awareness	Career decision-making
Themes	1. Development of motives 2. Examination of values 3. Examination of attitudes and orientation	1. Work expectations 2. Work climates	1. Examination of cultural expectations and stereotypes
Media	1. Role playing 2. Exercises 3. Microbehaving	1. Speakers 2. Visitations 3. Work experiences	1. Group projects

Sample units
1. Developing achievement motivation: the darts-dice exercise
2. Clarifying values: the values grid and activity lists
3. Role playing: interpersonal "bargaining"
4. Videotaping and critiquing a class
5. Work visitations: the exploration of work climate
6. Group projects: cultural work stereotypes

Source: Tuckman, 1974, p. 207.

TABLE 4

TUCKMAN'S STAGE 8: AUTONOMY--GRADES 11-12

Major orientation toward	Ginzberg	Erikson	Piaget	Necessary for progression
Being able to learn and produce; need to understand and be creative	Tentative (exploration)	Generativity vs stagnation (What can I become?)	Formal operations	1. Opportunity for productivity without social restraint 2. Stimulation 3. A new challenge

	Self-awareness	Career-awareness	Career decision-making
Themes	1. Development of skills and competencies 2. Examination of aspirations 3. Development of motives	1. Skill requirements 2. Educational requirements	1. Matching self and environment 2. Narrowing 3. Choosing
Media	1. Hands-on 2. Discussions	1. Searching 2. Work experiences	1. Individual projects 2. Counseling 3. Simulations
Sample units	1. Work "experience": trying jobs on for size 2. Guided search: career libraries and information systems 3. Group counseling: the teacher as counselor 4. Simulation: careers game designed by students 5. The talents-demands balance sheet for matching self and career		

Source: Tuckman, 1974, p. 209.

retrieval systems, simulations and gaming, and vocationally relevant curricula. The characteristics of the students being served should influence the selection of the appropriate method. For junior high school students the transitional experience of their educational level from broad to specific skills (bridge between elementary and high school) implies a need for broadening and exploratory experiences to understand the wide range of possibilities. The rapid physical and personal changes at diverse rates of this age group imply a need for a variety of methods to accommodate the whole group. Since junior high students are just developing abstract verbal skills, guidance methods may need to be more concrete and action oriented. And with the rapid growth and intense feelings of puberty, students will need opportunities to express and explore feelings.

At the high school level students are closer to the reality of a need for decision making. Guidance can deal with such pressure. Because students are becoming more verbally and intellectually skilled, guidance can proceed with multiple and more complex methods--exploration, evaluation and decision making. And with students faced with making the transition from high school to work or continued education, guidance methods will focus more on clarifying factors for effective decision making.

Other programs. A wide variety of educational programs for facilitating career development are currently being developed or are in operation in attempts to implement models and concepts like those described above. Hansen (1970) describes programs operating within schools (particularly total curriculum approaches), coordinating school-community resources, utilizing media and technology, and coordinating guidance with vocational education. Hansen and Borow (1973) outline nine specific programs showing promise in facilitating career development and ranging from work experience programs to small group counseling. Bailey, Wood, and Fischmar (1974) in an extensive bibliography list career development projects in most of the fifty states and U.S. territories plus various game, simulation, counseling, and information program aids.

Group Counseling

Group work is mentioned frequently as a component in both the models described above and in the programs described by Hansen and Borow (1973) and by Hansen (1970). Many authors recommend group guidance or counseling both for its economy (Hoppock, 1967, Strang, 1970) and for the dynamic context for client interaction and growth that a group can provide (Blocher, 1973; Mathewson, 1970; Strang, 1970; Traxler, 1970; Varenhorst, 1968; Wrenn, 1973). The group context can provide for greater peer interaction (Strang, 1970; Traxler, 1970), preparation for further counseling (Bennett, 1964), greater verbal interaction, a legitimate practice ground for new behaviors, a variety of models, and greater opportunities for the counselor to reinforce appropriate career behaviors (Varenhorst, 1968). Mathewson (1970) describes the group context as a "psychological gymnasium for the exercise of individual perceptions--their clarification, situational connections, integration and ultimate value orientation" (p. 139).

Research in vocational group counseling suffers from many of the shortcomings of group counseling research in general (Gazda, 1972). Lack of treatment replicability, small or extreme samples, and few multivariate studies are common problems. However, some studies have shown signs of the efficacy of group vocational counseling.

Higher Education

Group models without research. College counseling centers across the country are exploring a variety of vocational preparation or counseling programs in a group context.

Hyne (1973) reviewed innovative vocational counseling programs at the college level within the four counseling types outlined by Morrill and Forrest (1970). Programs including group practices were found for all four types of counseling although "group work" rather loosely included a range from career encounter groups to formal classes in occupational exploration. Group goals for the various programs included information seeking, self-awareness, work as self-expression, decision making, self-direction and responsibility, meaningful test utilization, rational career orientation, and life planning through values assessment. Major defects in the description of these programs were cited by Hyne:

> Few programs offered provision for assessing student vocational maturity or identifying differential experiences for students at different developmental levels. . . . A serious deficiency was the absence of either subjective or objective evaluative feedback data upon which to base program modifications. (1973, p. 17)

Healy (1974) has emphasized the need for counselor involvement in career education by teaching attitudes and skills. He briefly described several replicable counseling programs helpful in teaching attitudes and skills to college students.

Group models without treatment description. Frequently studies of vocational group counseling report only the design and the results without describing the "group counseling" process. This typically occurs in a comparison of group to individual counseling. Results are mixed.

Hoyt (1955) found both group and individual counseling effective over controls with freshmen men in facilitating vocational choice. There were no significant differences between individual and group counseling effects.

Graff, Danish, and Austin (1972) compared group counseling, individual counseling, and programmed instruction with freshmen and sophomores based on perceptions of assistance received. All three treatments produced significantly higher satisfaction with assistance than controls. The programmed instruction was perceived as more helpful than individual or group counseling.

Buckner (1970) compared group and individual counseling using vocational maturity as a criterion and found no differences with self-referred clients participating in individual and group counseling, although more students expressed satisfaction with individual counseling.

Jackson (1971) found positive movement but no significant differences between a control group and subjects having small group counseling on either Crites' Career Maturity Inventory or a vocational maturity scale.

In all of these studies the treatment was not defined beyond "group counseling." Except for the Hoyt study, no significant positive differences were found on any of the criterion variables except client satisfaction, and even in this area programmed instruction (Graff, Danish, & Austin, 1972) was seen as more helpful.

Group models with treatment description. In studies where "group counseling" was more specifically defined, outcomes have been generally more positive. This might suggest that more structured or planned group sessions may effect student outcomes more quickly. When "group counseling" is not described in the literature, it is generally assumed that the undescribed sessions are relatively unstructured, self-directive, spontaneous, and undescribable.

Smith and Evans (1973) compared a control group to two treatment groups of seventy-six freshmen and sophomores. One group had two to four sessions of individual counseling. Another group participated for five weeks in a program consisting weekly of (1) listening individually to an audio tape on the week's topic, (2) attending a large group meeting on the topic, and (3) participating in a small group session discussing the topic. In the small groups, leaders used reinforcement techniques to keep members on task. The five topics were decision making, values, interests, behavioral traits, and social influences. Both experimental groups showed significantly greater career development on Harren's Vocational Decision Check List. The group counseling combination was also significantly more effective than individual counseling in increasing career development scores.

Healy (1974) attempted a "replicable group career counseling procedure" by naming five tasks (one for each group session) or things that students were to learn, and then describing the facilitative atmosphere for learning to be provided by the group leader. Tasks included a focus on personal information gathering. In a study using this model with thirty-five college freshmen and twenty-four junior college students, he found pre to post gains and significant differences over controls on certainty ratings of educational and occupational plans, specificity of deliberation, and occupational information. No differences were found on quality of resources used or quality of potential or planned resources.

Biersdorf (1958) compared a short or limited group counseling experience to an expanded group experience with male college students. The short group experience consisted primarily of test interpretation; the extended program consisted of test interpretation plus discussion. Significant differences in favor of the extended group were found only in decreased frequency of expressed vocational problems although directional differences in favor of the extended group were found for certainty of choice, appropriateness of choice, suitability of certainty in terms of appropriateness, and degree of concern.

Aiken (1974) found significant results from reinforcement techniques in group counseling when the criterion was the behavior being reinforced, i.e., career information-seeking behaviors. Ninety-four students were divided into experimental and control groups with four subgroups consisting of students classified as consistent or inconsistent and mature or immature in career development. Experimental subjects participated in two or three one-and-one-half hour group counseling sessions in which information-seeking behaviors were reinforced verbally and nonverbally. All four experimental subgroups showed significantly more information-seeking behaviors after counseling than controls. Subjects classified as consistent showed more information-seeking behaviors than those classified as inconsistent. Maturity did not differentiate.

Summary. At the college level some group models, particularly those that describe the group sessions, seem to be effective in producing certain student outcomes. Even these studies, however, vary considerably in the kinds of group sessions and the kinds of student criteria used to measure success. Group sessions are described generally but much leader variation would occur in replicating the sessions from the author's descriptions. Criteria used are both varied and generally appropriate more to a twenty-year-old's choice making.

Secondary Education

The possibility of facilitating the career development of middle and high school students through counseling has been studied with variable results. Methods have included individual counseling and a variety of group-oriented situations as well as small group counseling.

Counseling research. Several studies have assessed the effects of counseling on students' vocational maturity attitudes with mixed results. Guerrero (1967) found no effects on Crites' attitude scale of Career Maturity Inventory for high school students who experienced a year of intensive vocational counseling. On the same scale, Carey (1965) found no differences between eleventh-grade students receiving counseling and students receiving counseling plus a summary of various test results.

Bovee (1967) found significant differences on the same attitude scale between controls and students receiving either counseling or precounseling preparation plus counseling. Asbury (1968) found significant increases on the attitude scale due to pre-test and counseling interaction with eighth-grade disadvantaged students. Andersen and Heimann (1967) found significant increases on a modified vocational maturity scale for individually counseled eighth-grade girls compared to controls after six counseling sessions. With some treatments, at least, the vocational maturity of students can apparently be facilitated through counseling.

Large group methods research. Studies incorporating group work vary in their use of "group" terminology as do programs described at the higher education level. In large scale programs for career or life education, some type of group interaction is typically included. In a study of the Neighborhood Youth Corps program in Appalachia, no significant effects on vocational maturity were found for tenth and eleventh graders after seven months in the program (Myers, 1966). In a study of the Developmental Career Guidance Project, Vriend (1969) found higher vocational maturity ratings among students in the experimental schools. Both studies included a group counseling component, but the group process was not described and it was apparently embedded in a total program including various other confounding treatments.

In classroom experiences, Schmieding and Jensen (1968) report no gains in vocational maturity for eleventh and twelfth graders in an eight-week occupations class. Rollings (1967) reports significantly more realistic choices of low to average ability ninth graders after fifteen class sessions of educational/vocational planning with or without additional counseling. Deciding is another instructional package designed for student groups and focusing on values and decision-making skills currently being used in secondary schools (Crites, 1971). More research of the effects of this program is needed.

Other innovative techniques involving group interaction include simulation (Johnson & Myrick, 1972; Varenhorst, 1968) and guided fantasy (Skovholt & Hoenninger, 1974). Formal research studies in these areas are still needed.

Group counseling research with no signficant effects. Research studies evaluating group vocational counseling vary in sample composition, type of treatment, and criterion variables. As in group counseling studies in higher education, lack of a described group treatment is a problem. Studies with no significant outcomes appear frequently in the literature.

Nichol (1969) compared the vocational maturity of ninth graders participating in an eight-week weekly group discussion to controls receiving no treatment. He found no significant differences in vocational maturity as measured by a structured interview and the attitude scale of the career maturity inventory. The group sessions were not described. Das (1965) found no significant differences on the career maturity inventory between groups of ninth-grade potential dropouts experiencing three to five sessions of individual counseling, multiple (group) counseling, or no counseling. Williams (1967) found no significant gains from pre- to post-testing or over controls on the Career Maturity Inventory between eleventh graders participating in individual counseling, group counseling, or no treatment. In all three of these studies "group counseling" was not described.

Two other studies gave a brief description of the group counseling sessions. Hanley (1970) studied individual and group counseling with high school underachievers. Thirty-six tenth- and eleventh-grade underachievers participated either in individual counseling, six sessions of group counseling, or no treatment. Group sessions involved counselor interaction plus structured discussion concerning values and attitudes about vocations. Using a pre-test, post-test, and six-weeks delayed post-test design, Hanley found no significant differences between groups on the Career Maturity Inventory, a self-concept of ability scale, or grade point index. Lauver (1966) studied the effects on the vocational values of tenth and eleventh graders of a programmed text on values and choices in career planning, a small group experience focusing on case studies illustrating aspects of career planning, a combination of the programmed text and the group experience, and no treatment. He found no differences between groups or grade levels.

Group counseling research with significant results. A few studies have found significant effects from small group vocational counseling, but their practicality is limited by the time involved, unusual assessment criteria, or unusual student sample.

Gilliland (1966) studied fourteen Negro adolescents participating in flexible group counseling for thirty-six weeks. Subjects showed significant gains in academic achievement, occupational aspiration, and vocational maturity over controls. Gains in grade-point averages approached significance. This study produced the strongest results while involving the greatest investment of counselor time (36 hours+)--a problem for practicing counselors.

Catron (1966) studied changes in self, ideal self, and ordinary person perceptions of high school students after experiencing a college and career planning group. Fifty-four students met in small groups for fourteen one-and-one-half hour sessions consisting of test interpretation, listening to tapes, and free discussion. After counseling, subjects' perceptions of self changed significantly to more positive images. Ideal-self and ordinary person perceptions were unchanged.

Hanson and Sander (1973) found differential effects of individual and group counseling on realism of choice of eleventh- and twelfth-grade boys classified as "overshooters" and "undershooters" in realism of vocational choice. Thirty subjects participated in either an average of three individual counseling sessions involving flexible discussion, or four to six group counseling sessions structured around case study presentations by group members. Overshooters in group counseling and undershooters in individual counseling showed significantly more realism than control subjects.

Jessee and Heimann (1965) followed up eighth graders in the beginning of their ninth-grade year to assess the effects of participating as eighth graders in six individual counseling sessions, six group guidance sessions involving didactic instruction in occupational planning, and no treatment. They found no differences when examining the criteria separately (Super's indices of vocational maturity; the Career Maturity Inventory; realism of ability, achievement, and interest self-estimates; and general occupational information), but found rank order differences (individual over group over no treatment) when all criteria were taken together.

Behavioral group counseling. The most frequently reported successful group procedures are those using a behavioral approach, usually reinforcement and/or modeling techniques. These studies are generally narrow in scope and focus on an increase in frequency of information-seeking behaviors.

Two studies indicate that social modeling via video tapes can be useful in increasing students' information-seeking behaviors, and that characteristics of the models can differentially increase behaviors in different subjects. Thoresen and Krumboltz (1968) presented four video tapes of models engaged in information seeking and classified by different degrees of athletic and academic success to high school males classified as having achieved high, medium, or low success in athletics or academics. The high athletic model produced the most gains in variety and frequency of information-seeking behavior for all levels of subjects. The high academic students were most responsive to all models. Thoresen, Krumboltz, and Varenhorst (1967) studied the sex of video-taped models with both male and female eleventh graders and found that (1) experimental subjects produced significantly more career exploratory behaviors than an inactive control group and (2) that male group leaders were more effective for male subjects, male models were more effective when presented by a male group leader, and that models' sex made no difference with female students.

Krumboltz and Schroeder (1965) studied the effects of both reinforcement and social modeling tapes with fifty-four eleventh graders. One group participated in group discussion in which the leader verbally or nonverbally reinforced information-seeking responses of members. A second group participated in the same type of group discussion with reinforcement and also listened to a male model discussing the same topics at the beginning of the sessions. Both groups showed significantly more information-seeking behaviors than a control group. Reinforcement discussion was more effective than a control group. Reinforcement discussion was more effective than no treatment for females but not for males. Reinforcement plus taped modeling was more effective for males but not females.

In two studies with eighth- and eleventh-grade students, Stewart and Thoresen (1968) compared information-seeking behaviors of students after two types of behavioral group counseling. Some students listened in groups to audio-presented group social models of occupational discussion followed by reinforcement discussion with the students. Other students engaged in reinforcement discussion after completing written materials on topics related to interests, expectations, and information resources. Both experimental groups showed significantly more information-seeking behaviors than controls, but considerable individual variation within the experimental groups was found.

Bergland and Quatrano (1974) used similar behavioral techniques with groups of eleventh-grade males but assessed effects on somewhat broader criteria than behavior frequency. Eighty subjects participated either in (1) structured group interaction consisting of written materials, counselor reinforcement, and job exploration assignments; (2) group social modeling; (3) a combination of group social modeling and structured group interaction; or

(4) an inactive control group. There were no significant differences found between groups on an attitude toward planning activities questionnaire, career planning inventory, vocational information survey, or vocational planning questionnaire.

In a study combining several factors Krumboltz and Thoresen (1964) studied 192 eleventh graders experiencing four treatments in two formats: individual and group counseling settings. Subjects were assigned to either individual or group exposure to reinforcement counseling, model reinforcement counseling, films and discussion, or no treatment. Results indicated that the treatments were significantly more effective in producing information-seeking behaviors in rank order: model reinforcement, reinforcement, films, and control. Some differences were found related to sex--model reinforcement was more effective than reinforcement counseling for males; both types were effective for females. No differences were found between group and individual formats for the different treatments except in interaction with some schools.

Summary. Group methods to facilitate career development of adolescents seem to be an accepted component of guidance practice. Definitions of group methods, however, vary and outcome research has produced mixed results even where the treatment was reasonably similar. Research studies are diverse in design, sample composition, and treatments; outcomes are variable; group procedures are often too skimpily described to be replicable in other settings. A coherent body of knowledge on effective group vocational counseling procedures with different populations is not available to the practicing counselor. In his review of group counseling research in 1969, Anderson concluded that there is no need for more general group counseling to increase vocational maturity--both terms being too unclear. What is needed are multivariate projects with multiple outcome criteria and specified differential treatments.

Vocational Exploration Group

Vocational Exploration Group (VEG) is a structured small group experience designed to increase self-confidence and self-awareness in the relationship of oneself to work (Daane, 1972). VEG was developed by Calvin J. Daane and associates in response to the need for some way to personalize job facts for counselees--to involve participants in the perceptual process of relating themselves to the world of work in addition to gaining information.

The primary focus is on personalizing the concept of job for each participant rather than on providing traditional information and differential assessment. The primary goal is increased self-confidence for creativity

Daane, 1973). Self-disclosure and feedback are major interaction dynamics throughout the structured group tasks. These two activities are focused around the topic "job" and are designed to encourage participants' creative thinking while being supported in their personalizing of the information being discussed.

The groups are conducted for five to six participants at a time in either a short program with eighteen tasks (about two hours) or a longer program of forty tasks (about five forty-five minute sessions). The tasks move participants through five phases: inclusion to reduce fears of exploration, establish group members as helpers for each other, and provide a simple framework for looking at the world of work; job information to increase the pool of knowledge of each participant; job personalization to relate possible choices to such work factors as satisfiers, interest-skills, and training requirements and to the participant's perception of self; expanded perception to increase creative thinking of possible alternatives; and next step to incorporate the program's learning into a specific individualized behavior to follow the group session.

Initial Research

VEG was originally developed and field tested for employment service applicants, i.e., persons specifically seeking a job. In a major research study, supported by the U.S. Department of Labor (Daane, 1971), 1,406 employment service applicants in eight states participated in VEG or served as controls. Data were obtained for fourteen groups: three subject groups labelled walk-ins, on work training, and high school; eight groupings by state; and three for totals. In six states the control subjects received no assistance. In two states controls received equal amounts of staff time in individual interviews. All subjects were assessed on tests for employability perceptions, perceptions of social alienation, Rokeach's dogmatism, and status concerning job immediately following the experience and again one month later.

VEG participants scored significantly higher on all three measures of employability perceptions: job personalization, movement toward job personalization, and self-recognition of work potential and aspiration. One month later significant differences had dropped but still favored the VEG participants on all three measures with differences significant at the .05 level for those participants who had entered training.

Somewhat greater percentages of VEG participants moved into training and stayed in training than controls. Of those who went from training into jobs, 68 percent were VEG participants. Tests of significance for frequency differences were not reported.

Of those already employed at the time of the study (38 out of 1,406), eleven lost their jobs--nine from the control group and two from VEG participants. Of those considered job ready and placed, twice as many were from the VEG group.

Five measures of social distance were obtained for each of the fourteen subject groups. Twenty-nine out of seventy scores significantly favored VEG participants. For seventy measures of believability or trust in others and the world of work twenty-nine scores significantly favored VEG participants. Of fourteen dogmatism and flexibility scores five out of fifteen favored the VEG participants (Daane, 1971).

Research with Adolescents

The study conducted with employment service applicants focused on a population that was seeking a job, in general having difficulty finding and/or keeping a job, and experiencing low levels of work self-concept. The ultimate goal of the VEG experience for these persons was to find and hold a specific job at that point in time. However, the structure of the VEG tasks is such that the content and goals of the experience for each participant are provided by the participants themselves. This implies that both the level of exploration and the specific goals (as personalized for each participant in the final phase, "Next Step") can and will vary with the career maturity level and needs of different populations. Other researchers have focused on using VEG with different populations at different stages of career development.

Crow (1973) examined the effects of a VEG experience on control expectancy, self-esteem, and vocational maturity of eleventh and twelfth graders. He found no significant differences between thirty VEG participants, thirty active controls, and thirty wait controls on the Rotter test for internal/external locus of control, the Rosenberg self-esteem inventory, or Crites' attitude scale of the Career Maturity Inventory. He suggested replication of the study isolating other variables possibly amenable to VEG influence using populations varying in grade level, ability, and interest.

Bergland and Lundquist (1974) conducted two studies with high school students. In one study sixty-three high school students (grade levels not given) participated either in the short program of VEG or in a wait control group. VEG participants were able to identify significantly more satisfiers obtainable from jobs and were more proficient at differentiating among jobs on the basis of interests and skills used in jobs than controls. No differences were found for information-seeking behaviors as reported on a career planning inventory. In the second study sixty ninth-grade students participated either in VEG, VEG without interaction, or a wait control. As assessed on a career exploration questionnaire, VEG participants showed significant increase over controls only on naming jobs with different subjects.

Grubb (1971a) compared twenty-eight ninth-grade students who experienced VEG to twenty-eight ninth-grade students who visited job sites, listened to job topic speakers, visited libraries, and wrote career papers. On an attitude questionnaire, VEG participants made significant gains from pre- to post-testing in self-knowledge, self-assessment, and attitudes toward jobs. The classroom activity group made no significant gains. The instrument used was a fifteen-item self-made questionnaire.

Two studies used VEG as a remedial experience with potential dropouts. Hawxhurst (1973) found no significant outcomes compared to a no treatment control group on the attitude scale of the Career Maturity Inventory or on an inventory of career choice factors for forty-two potential dropouts in the eighth grade participating in a modified VEG experience. Cross (1974) studied eighty-seven eighth-grade potential dropouts participating either in VEG, a two-hour group session which consisted of group discussion following the viewing of films on dropping out of school and choosing a vocation. No significant differences were found between groups two weeks later on a semantic differential, an employability perceptions inventory, a check list for exploratory career behaviors, or educational expectations and aspirations.

Two studies have been done with VEG to assess outcomes other than career development. Grubb (1971b) used VEG as a vehicle to increase empathy between fathers and their eleventh- and twelfth-grade sons. On a pre-test, post-test, and two-weeks' delayed post-test, sons completed a twenty-statement questionnaire ranking items such as job functions, job satisfiers, and job demands according to importance to them. Fathers completed the questionnaires as they predicted their sons would. Evaluation of grand means and means of job satisfiers indicated significantly increased congruence betweens sons' ratings and fathers' perceptions of sons' rating. Underestimates by fathers tended to remain the same; overestimates significantly decreased.

Powell (1973) studied the effect of a VEG experience on openness of participants compared to a control group and found significantly greater openness as measured on the Rokeach D Scale for the 240 VEG participants. There was no significant correlation between openness of participants and degree of openness (high or low) of group leaders.

Summary

Vocational Exploration Group seems to have potential as a guidance technique for developmental career counseling. The experience includes several recommended components of developmental vocational counseling such as emphasis on personalizing information, focus on process rather than content, emphasis on creativity and alternatives rather than one choice, goals defined in terms of individual participant's perception of self and felt needs, and insistence on a behavioral outcome of the experience expressed in terms of an individual's own goals.

Supportive research for VEG as a developmental guidance tool with adolescents is, however, lacking. Studies reporting significant outcomes obtained results from small and rather specific self-made instruments of questionable validity (Bergland & Lundquist, 1974; Grubb, 1971a) or on criteria not directly related to career development (Grubb, 1971b; Powell, 1973). Where no significant differences were obtained, samples must be considered small, particularly in attempts to assess the effects of only a two-hour treatment (Crow, 1973) and/or where studies were conducted with extreme populations such as potential dropouts for whom expectations for progress would be less than for a random population of adolescents. Samples for all studies vary in grade level (where grade level was reported)--a factor of particular importance in exploring a developmental concept such as career.

Research has not been done with VEG as a developmental guidance treatment with a large sample of school age adolescents at various grade levels. This study attempted to fill gaps in the available research by using (1) a random sample of public school adolescents across three grade levels and (2) established instruments specifically relevant to vocational maturity and exploratory behaviors.

CHAPTER III

METHODS AND PROCEDURES

Chapter III presents the hypotheses tested and describes the research design of the study including population, sampling procedures, experimental design, experimental treatment, the criterion instruments, and data collection.

Hypotheses

This investigation focused on five major hypotheses related to the effect of a VEG experience on the career development of eighth-, tenth-, and twelfth-grade students. In addition four subhypotheses were tested for each of the major hypotheses. These focused on the variables of sex, race, grade level, and pre-testing. The following null hypotheses were tested:

1. There will be no significant differences between subjects participating in VEG and control subjects' career choice attitudes as measured on the attitude scale of the Career Maturity Inventory (CMI). Using the above criterion:

1a. There will be no significant interaction of sex with VEG participants' and control subjects' scores.

1b. There will be no significant interaction of race with VEG participants' and control subjects' scores.

1c. There will be no significant interaction of grade level with VEG participants' and control subjects' scores.

1d. There will be no significant interaction of pre-testing with VEG participants' and control subjects' scores.

2. There will be no significant differences between subjects participating in VEG and control subjects in degree of job personalization as measured on subscore 1 of the Employability Perceptions Inventory (EPI-1). Using the above criterion:

2a. There will be no significant interaction of sex with VEG participants' and control subjects' scores.

2b. There will be no significant interaction of race with VEG participants' and control subjects' scores.

2c. There will be no significant interaction of grade level with VEG participants' and control subjects' scores.

2d. There will be no significant interaction of pre-testing with VEG participants' and control subjects' scores.

3. There will be no significant differences between subjects participating in VEG and control subjects in active movement toward job personalization as measured by subscore 2 of the Employability Perceptions Inventory (EPI-2). Using the above criterion:

3a. There will be no significant interaction of sex with VEG participants' and control subjects' scores.

3b. There will be no significant interaction of race with VEG participants' and control subjects' scores.

3c. There will be no significant interaction of grade level with VEG participants' and control subjects' scores.

3d. There will be no significant interaction of preesting with VEG participants' and control subjects' scores.

4. There will be no significant differences between students participating in VEG and control subjects in self-recognition of work potential and aspiration as measured on subscore 3 of the Employability Perceptions Inventory (EPI-3). Using the above criterion:

4a. There will be no significant interaction of sex with VEG participants' and control subjects' scores.

4b. There will be no significant interaction of race with VEG participants' and control subjects' scores.

4c. There will be no significant interaction of grade level with VEG participants' and control subjects' scores.

4d. There will be no significant interaction of pretesting with VEG participants' and control subjects' scores.

5. There will be no significant differences between males' and females' frequency of next steps taken after participating in VEG as measured by a self-report questionnaire. Using this criterion:

5a. There will be no significant differences between blacks and whites.

5b. There will be no significant differences between eighth-, tenth-, and twelfth-graders.

5c. There will be no significant differences between pre-tested and nonpre-tested subjects.

5d. There will be no significant interactions between sex, race, grade level or pre-tested status of subjects.

Population and Sample

Population

The population of this study consisted of approximately 1,660 eighth graders registered at seven middle schools and 1,770 tenth and 1,270 twelfth graders registered at five high schools in Alachua County, Florida. Students in these grade levels who had been identified and placed in exceptional student programs for the educable mentally retarded, emotionally disturbed, or socially maladjusted, and students who have participated in a Vocational Exploration Group during the academic year 1974-75 prior to the time of this study were excluded. All schools are racially integrated with a ratio of approximately 65 percent white to 35 percent black students--the approximate ratio of white to black in the local population. Three of the high schools and four of the middle schools are located in the urban area of Gainesville, Florida. The other two high schools and three middle schools are located in rural areas of the same county.

Sample

A total of 1,320 students were randomly chosen from the computer listings of registered students at the twelve participating schools according to a randomized cluster design. Using a table of random numbers four groups of ten students were chosen from the grade level rolls of each school. One group was designated as experimental and was further randomly divided into two groups of five subjects. Both of these small groups received the VEG experience. One small group was pre-tested; one was not. The second group of ten subjects served as controls and received no counselor attention until after the study was completed. Half of this group was pre-tested; half was not. The third and fourth groups served as alternates to the experimental and control groups. Figure 1 illustrates

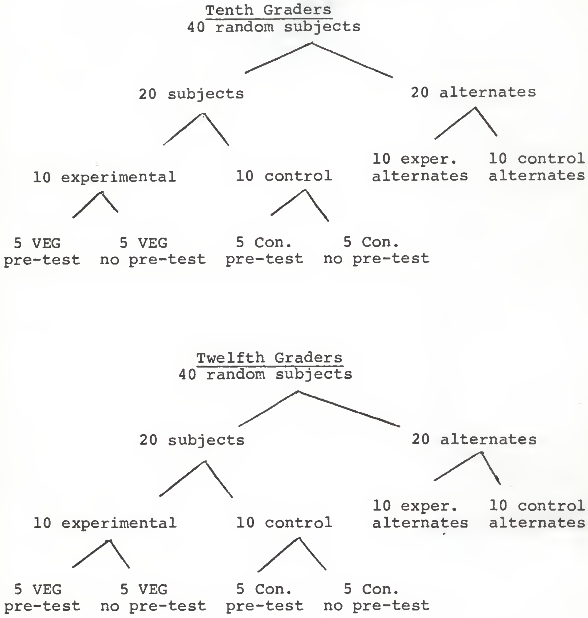

FIGURE 1

SUBJECT ASSIGNMENT FOR ONE HIGH SCHOOL
WITH ONE VEG LEADER

the subject assignment for a high school with one group leader.

Randomized lists of subjects were prepared and distributed to VEG group leaders in each school approximately three months prior to the treatment period so that these students could be excluded from on-going VEG groups in the schools. The list of alternates was also provided to allow for deletions due to (1) previous participation in VEG in the same academic year; (2) enrollment in exceptional student programs for the educable mentally retarded, socially maladjusted, and emotionally disturbed; (3) withdrawal from school prior to the designated treatment period; or (4) absenteeism on the first day of the study (pre-testing). Each group leader made such deletions and replaced the deleted name with the first name from the alternate list, moving down the list in sequential order. Deletions were kept up to date in a like manner. Remaining alternates at the time of pre-testing were not included in the study.

Eleven VEG group leaders at the middle school level and eleven leaders at the high school level had volunteered to lead two VEG groups of five subjects each at each grade level in their school. Thus the subjects for this study consisted of 110 students at each of the three grade levels randomly assigned to experimental and control groups (N=660). Figure 2 illustrates the distribution of subjects among schools.

Subjects selected to participate in both the experimental and control groups were contacted by the VEG group leader to which they had been assigned and told that they had been selected to participate in some aspects of the school's career guidance program.

Group Leaders

All VEG group leaders were working in the school in which they conducted Vocational Exploration Groups. Training ranged from no formal graduate work in counseling to all course work completed for the doctorate degree. All leaders had received a standardized two-day training program in Vocational Exploration Group leadership from a certified trainer. Training had been completed within eighteen months of the study. Thus, all group leaders were certified VEG group leaders. Each was experienced in leading VEG. All leaders followed the short eighteen-task VEG program from a standard leader's manual.

Design of the Study

The design of this study utilized the Solomon four-group model, replicated across three grade levels. This design controls for all internal sources of possible invalidity listed by Campbell and Stanley (1963), i.e.,

Middle Schools	VEG Leaders	8th grade E	8th grade C	8th grade A	10th grade E	10th grade C	10th grade A	12th grade E	12th grade C	12th grade A
A	2	20	20	40						
B	2	20	20	40						
C	2	20	20	40						
D	2	20	20	40						
E	1	10	10	20						
F	1	10	10	20						
G	1	10	10	20						
High Schools										
A	4				40	40	80	40	40	80
B	3				30	30	60	30	30	60
C	2				20	20	40	20	20	40
D	1				10	10	20	10	10	20
Totals	22	110	110		110	110		110	110	

E = Experimentals

C = Controls

A = Alternates

FIGURE 2

DISTRIBUTION OF SUBJECTS (N=660) IN MIDDLE AND HIGH SCHOOLS history, maturation, testing, instrumentation, regression, selection, mortality, and interaction of the above. It also controls for possible invalidity from the external source of test main effects and interaction. Two other sources of invalidity are (1) interaction of selection and treatment and (2) possible reactive arrangements. The first is unlikely since all schools in the school district participated in the study and all subjects were selected randomly. The second is unlikely since the experimental variable (VEG) in this study is an on-going procedure in the public schools of this district and subjects were asked to participate in the same way such invitations are currently issued by the guidance departments.

The resulting design was as follows for each grade level:

R	O_1	X	O_2
R	O_3		O_4
R		X	O_5
			O_6

R = Randomly selected group
X = Treatment
O = Observation

During the first week of the study half of the experimental and half of the control group were administered the pre-experimental instruments--the attitude scale of the Career Maturity Inventory (CMI) and the Employability Perceptions Inventory (EPI). During the second week all experimental subjects participated in the short eighteen-task program (approximately two-and-one-half hours) of the Vocational Exploration Group. During the fourth week all experimental and control subjects were administered the post-experimental instruments--the same forms of the CMI and EPI. In addition experimental subjects were asked to report in writing on the status of their next step--a career-goal exploratory behavior decided upon by each participant at the end of each VEG program. Group leaders administered all instruments to the subjects.

Vocational Exploration Group Program

VEG is a commercially packaged program developed by Calvin J. Daane (1972). The program comes in the form of a kit which includes all materials and instructions to complete the experience: a leader's manual, job information booklets, job inventories, charts listing various choice elements discussed in the group session, and stimulus charts and pictures for discussion. Research related to the VEG experience was reported in Chapter II.

The VEG is designed to focus on the points of person/job interrelating rather than simply characteristics of either the person or the job; i.e., job functions--what the person actually deals with in the job, job satisfiers--what the job may give to the worker, and job interests and skills--what the worker may bring to the job both to fulfill job demands and the worker's own needs. Within a group context, each participant experiences the process of relating himself to each of these person/job relationship points by verbalizing in the presence of others his thoughts in each area and by receiving feedback and assistance in job exploration from other participants in the group.

The short program of VEG takes approximately two-and-one-half hours to complete and proceeds through eighteen structured group tasks (Appendix A). The long program takes approximately four hours to complete in five 45-50 minute sessions and proceeds through forty tasks. Tasks refer to each specific activity introduced by the leader for group participation. All subjects participating in this study experienced the VEG short program.

Both the short and long programs are structured into five phases of group experience:

Phase I Inclusion: In this phase members are introduced, disclose information about themselves, and give and receive feedback. The purpose of this phase is to develop group cohesiveness, group helpfulness, and increased levels of self-confidence for individual participants to free perceptions for more creative thinking.

Phase II Job Inventory: In this phase members pool information about as many jobs as possible using stimulus materials in the kit and their own experience.

Phase III Job Personalization: Members are introduced to the concepts of job satisfiers and job demands and relate themselves and their own job choices to each of these concepts, plus those of job function and training requirements.

Phase IV Expansion of Jobs Personalized: Members are encouraged to expand their choices within the conceptual framework developed in the group to include the idea of multiple alternatives in relation to self.

Phase V Next Step: Each group member is assisted by the group in delineating a specific behavior that they can do to begin progress toward the job goal or goal area that they are currently considering for themselves. (In this study participants were

> asked to decide on a behavior that could be performed within the next two weeks after the VEG experience.)

The experience thus progresses through the steps of establishing group inclusion, developing a large pool of data, personalizing data for oneself within a given conceptual framework, expanding the data to include other personalized possibilities, and deciding on a specific behavior to implement learning outside the group.

Leader behaviors fall into two categories: tasking and selective responding. Tasking refers to giving clear understandable instructions for each of the tasks in the program and assisting group participants in moving through each activity. All directions to the leader for completing each task, including the exact statements to be made to group participants, are printed in the VEG leader's manual.

Selective responding refers to the responses that the leader makes to participants to enrich and enhance the process of moving through the tasks. In their training group leaders are instructed and given practice in making the following kinds of responses: selecting the focus of members' verbalizations, making periods or terminating responses, asking questions, making reflective statements or "repeats" based on both content and feeling, pairing group participants on either content or feeling, and utilizing combinations of responses and focus to affect the excitement/comfort level of the group and individual participants. Instructions for each task in the leader's manual indicate if leader responding is appropriate or inappropriate during that activity, and include recommendations for the type of responses to be made.

Instruments

Five measures were assessed for subjects participating in the study. The attitude scale of the Career Maturity Inventory was administered to subjects to measure career choice attitudes. The Employability Perceptions Inventory, which yields three subscores, was administered to subjects to measure subjects' degree of job personalization, active movement toward job personalization, and self-perceptions of employability potential and aspiration. In addition a count of "Next Steps" taken by experimental subjects was obtained from self-report questionnaires.

Attitude Scale--Career Maturity Inventory (CMI)

The Career Maturity Inventory attitude scale was developed over the last decade by John Crites and published in 1973. The CMI attitude scale is a self-report instrument consisting of fifty items which are designed to measure attitudes towards vocational choice on the following five dimensions: involvement in the choice process, orientation toward work, independence in decision making, preference for career choice factors, and conceptions of the choice process.

The fifty items are written as statements in either first or third person expressing a thought about the world of work and career choice. Subjects respond to statements by marking "True" if they believe the statement to be true or mostly true, and "False" if they believe the statement to be false or mostly false. Although the scale is designed to include items theoretically representative of the five dimensions listed above, only one total score is calculated.

Reliability coefficients reported for the attitude scale are acceptable given the theoretical nature of the variable. A mean internal consistency coefficient on item data from grades six through twelve is reported to be .74. This value is considered acceptable and consistent both with similar instruments and with the theoretical assumption that inclusion of five dimensions in one score would reduce internal consistency to below that of a more homogeneous measure. A test-retest reliability coefficient of .71 is reported for 1,648 subjects in grades six through twelve over a one-year interval. This is again consistent with the theoretical assumptions that a developmental variable, as the attitude scale is designed to be, matures over time (Crites, 1973) and, therefore, a very high coefficient would not be expected.

Content validity has been demonstrated in both the derivation of the items and by expert judge agreement. Content of items was derived from item stems written from basic concepts in career development theory and completed by students in grades seven through twelve. The fifty items finally selected for the inventory are those that distinguished between grade levels in a monotonic progression increasing from sixth through twelfth grade. The empirical scoring key was compared to ten expert judges' "rational" judgments on the same items with a resulting 74 percent agreement (Crites, 1973).

Criterion-related validity has been indicated in several studies yielding r's in the .30's with other career maturity indices such as realism of occupational aspiration; consistency, decision, and realism of career choice; and the Readiness for Vocational Planning scale. One study found no correlation with Super's Indices of Vocational Maturity. Few studies correlating the Attitude Scale with longitudinal criterion are available (Crites, 1973).

Studies are also cited by the author indicating mixed but generally positive support for construct validity in the areas of response bias, correlations with other variables, and experimental manipulations of counseling and didactic experiences (Crites, 1973).

Employability Perceptions Inventory (EPI)

The Employability Perceptions Inventory (EPI, Appendix B) was developed by Calvin Daane expressly for use with Vocational Exploration Group outcome measurement. The EPI is a nineteen-item questionnaire designed to assess the degree to which the subject is perceiving himself as employable. There are three subscores. Job Personalization, subscore 1 (EPI-1), is designed to measure understanding of man's relationship to work and the critical links of job function, job demands, and job satisfaction. Movement toward Job Personalization, subscore 2 (EPI-2), indicates more active involvement in job personalization by less passive responses to the job personalization items. Self-Recognition of Work Potential and Aspiration, subscore 3 (EPI-3), indicates clarity of self-perceptions toward work potential and choice aspirations.

The first thirteen items of the EPI are statements about man/work relationships and the specific man/job links discussed in the VEG program. Subjects respond to each statement as "True," "False," or "Don't Know." Subscore 1 consists of the number of correct responses. Subscore 2 consists of the number of "Don't Know" responses. The last six items consist of statements in the first person relating the subjects' perceptions of self to the elements of job choice discussed in the program. Subjects respond to each item on a five-point Likert-type scale from "Very Sure" to "Don't Know." Scores consist of the sum of the values of each response.

The author reports that test-retest reliability coefficients over a one-month interval were significant at the .01 level. No coefficients were reported. Reliability between administrators for oral administration was also tested with a reliability coefficient in one study of .84 and a nonsignificant t in another study between several administrators (Daane, 1971).

Content validity is present in the items in that they reflect the elements of job function, job demands, or job satisfiers, or the concepts which define these, as expressed in the VEG program. Items comprising part III of the EPI reflect the specific goals of the program, i.e., the participant will be surer of job possibilities for self, will be able to name several job possibilities, etc. Such goals are written as first person statements in section III of the EPI. The author does not discuss criterion or construct validity although the subjects on which the instrument was developed and utilized showed greater job placement, job satisfaction, and less alienation and dogmatism compared to controls concurrently with gains on all three subscores of the EPI (Daane, 1971).

Next Step

All experimental subjects were asked to complete a questionnaire (Appendix C) asking them to report on their "Next Step" as identified in the past phase of their VEG experience. The questionnaire and its directions were designed to eliminate as much as possible any bias towards reporting affirmative answers because of social acceptability or tester influence. Subjects were given a chance to remember their "Next Step" or not, and then to report on whether they had had an opportunity to take the next step.

Collection of the Data

Raw scores for the Career Maturity Inventory and Employability Perceptions Inventory were used for analysis. Scores on the CMI consisted of the number of correct responses. On the EPI subscore 1 consisted of the number of correct responses on items 1 through 13. Subscore 2 consisted of the number of "Don't Know" responses on items 1 through 13. Subscore 3 consisted of the summed values of checked responses on items 14-19. On the five-point scale a response of "Very Sure" carries a value of 5 and a response of "Don't Know" carries a value of 1.

Responses to all instruments except the Next Step questionnaire were recorded by subjects on a standardized answer sheet suitable for mechanical reading. From these response sheets complete data were collected for 422 subjects. Losses from the original sample were as follows:

1. Two group leaders at two different high schools declined participation before the study took place--one because of personal emergency leave and one because of the pressures of other job obligations. This resulted in the loss of eighty tenth and twelfth graders from the sample.

2. Data from two group leaders were eliminated from the study by the researcher. One leader had provided subjects with incorrect coding information making the resulting answer sheets impossible to classify. Another group leader was unable to complete post-testing within the time element of this study because of special circumstances arising at her school which required her time in other duties. This resulted in the loss of forty tenth and twelfth graders and twenty eighth graders from the sample.

3. Seventeen answer sheets were rejected by the mechanical scanner for incorrect coding of identification data.

4. Five answer sheets were rejected by the mechanical scanner for unknown reasons.

5. Five sets of responses were eliminated because of numerous omissions that were uninterpretable.

6. Data were not completed for seventy-one subjects because of absences or schedule conflicts at the time of post-testing.

Of the final 422 subjects on which complete data were collected, 211 were experimental subjects and 211 were control subjects.

The statistical analysis of the data collected on these 422 subjects is presented in Chapter IV. Chapter V gives a summary, discussion, limitations of the study, and recommendations.

CHAPTER IV

ANALYSIS OF RESULTS

Chapter IV reports a systematic analysis of the data obtained in this study. Data were obtained on the effect of five independent variables on five dependent variables. The independent variables were treatment group, sex, race, grade level, and pre-tested status. The dependent variables were (1) the attitude scale of the Career Maturity Inventory (CMI), (2) subscore 1 of the Employability Perceptions Inventory--job personalization, (3) subscore 2 of the Employability Perceptions Inventory (EPI-2)--movement toward job personalization, (4) subscore 3 of the Employability Perceptions Inventory (EPI-3)--self-recognition of work potential and aspiration, and (5) frequency of "Next Steps" taken.

Overview of the Statistical Analysis

Post-test scores. To test for overall effects in the total research design and to screen for interaction effects, a multivariate analysis of variance test for unequal cell sizes was first performed on the post-test scores of all subjects for the first four criterion variables of CMI, EPI-1, EPI-2, and EPI-3. All possible two-way interactions were simultaneously investigated. A significant F-statistic for the total multivariate analysis indicated the need for further investigation with each criterion variable in a univariate analysis; and only those interactions found to be significant at the multivariate level needed to be investigated further. Since this initial analysis was primarily a screening device, a significance level of .10 was chosen as the level indicative of the need for further investigation.

The F-statistic of 1.29 obtained from the multivariate analysis was significant at the .10 level. In addition the interaction of treatment group with race produced an F-statistic of 2.74 significant at the .05 level. F values for the multivariate analysis of post-test scores are reported in Table 5.

Separate univariate analyses of variance including the interaction of group with race were then performed on the scores for each of the four criterion variables. A significance level of .05 was selected for rejecting null hypotheses. The results of these analyses are reports under Hypotheses 1 through 4 below.

Difference scores. Differences between pre-test and post-test scores on the first four criterion variables

TABLE 5

F-VALUES FOR MULTIVARIATE ANALYSIS OF VARIANCE FOR POST-TEST SCORES WITH TWO-WAY INTERACTIONS

Source	DF	F-Value
Total	56	1.293847*
Grade x Group	8	1.593125
Grade x Race	8	1.567987
Grade x Sex	8	1.443027
Grade x Pre-tested Status	8	1.162084
Group x Sex	4	0.881716
Group x Race	4	2.742115**
Group x Pre-tested Status	4	1.482650
Race x Sex	4	0.450291
Race x Pre-tested Status	4	0.149398
Sex x Pre-tested Status	4	0.621320

*p < .10

**p < .05

were available for 211 of the subjects studied. These scores were treated with the same statistical analysis as the post-test scores described above. The F-statistic of 1.98 obtained for the total analysis was significant at the .01 level of confidence. In addition the interaction of sex with treatment group produced an F-statistic of 1.95 significant at the .10 level, and the interaction of grade level with race produced an F-statistic of 3.245 significant at the .01 level. F values for the multivariate analysis of difference scores are reported in Table 6. Separate univariate analyses of difference scores were then performed for each criterion variable including the interactions of sex with group and grade with race. Results of these analyses are reported below under Difference Scores Analysis.

"Next Step." The frequency count of "Next Steps" taken by subjects was limited to treatment group participants since only these students had the opportunity to take a "Next Step." A nonparametric analysis of variance was performed on these frequency counts to determine significant differences in frequencies of "Yes" responses between males and females, blacks and whites, eight, tenth, and eleventh graders, and pre-tested and nonpre-tested subjects, and to determine any interactions between these groups up to the two-way level. In addition percentages of "Yes"

TABLE 6

F-VALUES FOR MULTIVARIATE ANALYSIS OF VARIANCE FOR DIFFERENCE SCORES WITH TWO-WAY INTERACTIONS

Source	DF	F-Value
Total	36	1.982836***
Grade x Group	8	1.435525
Grade x Race	8	3.245272***
Grade x Sex	8	0.925201
Group x Race	4	1.591094
Group x Sex	4	1.954848*
Race x Sex	4	1.547434

*p < .10

***p < .01

responses to the question "Have you had a chance to take your 'Next Step'?" were calculated for the total sample and for each sex, race, grade level, and pre-tested or non-pretested group. The results of this analysis are reported below under Hypothesis 5.

Hypothesis 1. There will be no significant differences between subjects participating in VEG and control subjects' career choice attitudes as measured on the attitude scale of the Career Maturity Inventory (CMI).

The results of the analysis of variance for the CMI post-test scores are reported in Table 7. The obtained F-statistic of .001 for groups was not significant at the .05 level of confidence. The null hypothesis was supported. On the same criterion the following subhypotheses were tested:

1a. There will be no significant interaction of sex with VEG participants' and control subjects' scores.

The F-statistic of 0.88 for the interaction of sex with treatment group obtained from the multivariate analysis of variance of post-test scores was not significant at the .05 level of confidence. Further investigation of this interaction in the univariate analysis was, therefore, not performed. The null hypothesis was supported.

1b. There will be no significant interaction of race with VEG participants' and control subjects' scores.

The F-statistic of 0.17 for the interaction of race with treatment group obtained from the univariate analysis

TABLE 7

ANALYSIS OF VARIANCE OF POST-TEST SCORES FOR CMI

Source	DF	Sum of Squares	Mean Square	F Value
Regression	7	4168.4288	595.4898	17.2294
Error	414	14308.7844	34.5622	
Corrected Total	421	18477.2132		

Source	DF	Partial SS	F Value
GR	2	643.0660	9.3030**
Group	1	0.0381	0.0011
Pre-Post	1	23.0102	0.6657
Race	1	1274.0375	36.8620***
Sex	1	77.4099	2.2397
Group X Race	1	6.0236	0.1742

**p < . 01
***p < .001

was not significant at the .05 level of confidence. The null hypothesis was supported.

> 1c. There will be no significant interaction of grade level with VEG participants' and control subjects' scores.

The F-statistic of 1.59 for the interaction of grade level with treatment group obtained from the multivariate analysis of variance of post-test scores was not significant at the .05 level of confidence. Further investigation of this interaction in the univariate analysis was, therefore, not performed. The null hypothesis was supported.

> 1d. There will be no significant interaction of pre-testing with VEG participants' and control subjects' scores.

The F-statistic of 1.48 for the interaction of pre-tested status with treatment group obtained from the multivariate analysis of variance of post-test scores was not significant at the .05 level of confidence. Further investigation of this interaction in the univariate analysis was, therefore, not performed. The null hypothesis was supported.

In the analysis of main effects significant differences at the .05 level of confidence were found between grade levels and between races. Mean scores on the CMI rose with increasing grade level in keeping with the empirical construction of the CMI as a developmental instrument. Mean scores by race favored white students. Means and standard deviations of CMI scores for the five independent variables and for treatment groups by race are reported in Table 8.

Hypothesis 2. There will be no significant differences between subjects participating in VEG and control subjects' degree of job personalization as measured on subscore 1 of the Employability Perceptions Inventory (EPI-1).

The results of the analysis of variance for the post-test scores on EPI-2 are reported in Table 9. The obtained F-statistic of 0.696 for groups was not significant at the .05 level of confidence. The null hypothesis was supported. On the same criterion the following subhypotheses were tested:

2a. There will be no significant interaction of sex with VEG participants' and control subjects' scores.

The F-statistic of 0.88 for the interaction of sex with treatment group obtained from the multivariate analysis of variance of post-test scores was not significant at the .05 level of confidence. Further investigation of this interaction in the univariate analysis was, therefore, not performed. The null hypothesis was supported.

2b. There will be no significant interaction of race with VEG participants' and control subjects' scores.

The F-statistic of 0.88 for the interaction of race with treatment group obtained from the univariate analysis

TABLE 8

MEANS AND STANDARD DEVIATIONS FOR CMI POST-TEST SCORES

Group	N	Mean	S.D.
Experimentals	200	32.7538	6.2081
Controls	222	32.2589	6.9840
Blacks	123	28.1371	6.4611
Whites	299	34.2977	5.8138
Males	200	31.7650	6.2406
Females	222	33.1435	6.9046
Eighth graders	157	31.1720	5.8618
Tenth graders	134	31.7313	7.1977
Twelfth graders	131	34.7939	6.3133
Pre-tested	211	32.2547	6.2674
Nonpre-tested	211	32.7299	6.9767
White Controls	160	34.0375	5.9069
Black Controls	62	27.6190	7.4128
White Experimental	139	34.5580	5.7134
Black Experimental	61	28.6721	5.3126

TABLE 9

ANALYSIS OF VARIANCE OF EPI-1 POST-TEST SCORES

Source	DF	Sum of Squares	Mean Square	F Value
Regression	7	79.6548	11.3792	2.7670**
Error	414	1702.5631	4.1124	
Corrected Total	412	1782.2180		

Source	DF	Partial SS	F Value
GR	2	32.1117	3.9042*
Group	1	2.8611	0.6957
Pre-Post	1	0.7596	0.1847
Race	1	6.5460	1.5917
Sex	1	3.9172	0.9525
Group x Race	1	3.6240	0.8812

$*p < .05$

$**p < .01$

was not significant at the .05 level of confidence. The null hypothesis was supported.

2c. There will be no significant interaction of grade level with VEG participants' and control subjects' scores.

The F-statistic of 1.59 for the interaction of grade level with treatment group obtained from the multivariate analysis of variance of post-test scores was not significant at the .05 level of confidence. Further investigation of this interaction in the univariate analysis was, therefore, not performed. The null hypothesis was supported.

2d. There will be no significant interaction of pre-testing with VEG participants' and control subjects' scores.

The F-statistic of 1.48 for the interaction of pre-tested status with treatment group obtained from the multivariate analysis of variance of post-test scores was not significant at the .05 level of confidence. Further investigation of this interaction in the univariate analysis was, therefore, not performed. The null hypothesis was supported.

The analysis of main effects produced an F-statistic of 3.90 for differences between grade levels significant at the .05 level. Mean scores rose with increasing grade level. Since content of these items was similar to items on the CMI, these differences were in keeping with the developmental nature of the criterion variable. Means and standard deviations for EPI-1 post-test scores for the five independent variables and for treatment group by race are reported in Table 10.

Hypothesis 3. There will be no significant differences between subjects participating in VEG and control subjects' active movement toward job personalization as measured by subscore 2 of the Employability Perceptions Inventory (EPI-2).

The results of the analysis of variance for the post-test scores on the EPI-2 are reported in Table 11. The F-statistic of 3.54 for groups approached significance at the .05 level of confidence (actual probability .06). However, this effect also occurred in the interaction of race with group (see subhypothesis 3b below). The null hypothesis was supported. On the same criterion the following subhypotheses were tested:

3a. There will be no significant interaction of sex with VEG participants' and control subjects' scores.

The F-statistic of 0.88 for the interaction of sex with treatment group obtained from the multivariate analysis of variance of post-test scores was not significant at the .05 level of confidence. Further investigation of this interaction in the univariate analysis was, therefore, not performed. The null hypothesis was supported.

3b. There will be no significant interaction of race with VEG participants' and control subjects' scores.

The F-statistic of 3.38 for the interaction of race with treatment group was not significant at the .05 level

TABLE 10

MEANS AND STANDARD DEVIATIONS FOR EPI-1 POST-TEST SCORES

Group	N	Mean	S.D.
Experimentals	200	4.3467	2.0537
Controls	222	4.3348	2.0639
Blacks	123	3.8790	1.8896
Whites	299	4.5318	2.0954
Males	200	4.4050	1.9648
Females	222	4.2825	2.1385
Eighth graders	157	4.0764	1.7597
Tenth graders	134	4.1866	2.1839
Twelfth graders	131	4.8015	2.1889
Pre-tested	211	4.3774	1.9927
Nonpre-tested	211	4.3033	2.1231
White Controls	160	4.5625	2.0822
Black Controls	62	3.7306	1.9110
White Experimental	139	4.4855	2.1213
Black Experimental	61	4.0328	1.8705

TABLE 11

ANALYSIS OF VARIANCE OF EPI-2
POST-TEST SCORES

Source	DF	Sum of Squares	Mean Square	F Value
Regression	7	64.5339	9.2191	2.1130*
Error	414	1807.2741	4.3629	
Corrected Total	421	1870.8080		

Source	DF	Partial SS	F Value
GR	2	6.4898	0.7437
Group	0	15.4255	3.5355—
Pre-Post	1	9.4491	2.1657
Race	1	20.6648	4.7364*
Sex	1	25.4295	5.8284*
Group x Race	1	14.7567	3.3822—

*p < .05

—approaching p < .05

of confidence. The null hypothesis was supported at that level. However, the F value was approaching significance (probability 0.066). Black experimental subjects indicated less activity than black or white control subjects. White experimental subjects showed more activity than white or black control subjects.

3c. There will be no significant interaction of grade level with VEG participants' and control subjects' scores.

The F-statistic of 1.59 for the interaction of grade level with treatment group obtained from the multivariate analysis of variance of post-test scores was not significant at the .05 level of confidence. Further investigation of this interaction in the univariate analysis was, therefore, not performed. The null hypothesis was supported.

3d. There will be no significant interaction of pre-testing with VEG participants' and control subjects' scores.

The F-statistic of 1.48 for the interaction of pre-tested status with treatment group obtained from the multivariate analysis of variance of post-test scores was not significant at the .05 level of confidence. Further investigation of this interaction in the univariate analysis was, therefore, not performed. The null hypothesis was supported.

In the analysis of main effects the F-statistic of 4.74 for differences between races was significant at the

.05 level. The F-statistic of 5.83 for differences between sexes was also significant at the .05 level. Blacks scored higher than whites; females scored higher than males. Means and standard deviations for EPI-2 for the five independent variables and for treatment group by race are reported in Table 12.

Hypothesis 4. There will be no significant differences between subjects participating in VEG and control subjects self-recognition of work potential and aspiration as measured on subscore 3 of the Employability Perceptions Inventory (EPI-3).

The results of the analysis of variance of post-test scores on EPI-3 are reported in Table 13. The F-statistic of 6.96 for differences between treatment groups was significant at the .01 level of confidence. The null hypothesis was rejected. A further inspection of the data, however, indicated that the difference between treatment groups was attributable to the effect of race on treatment group (see subhypothesis 4b below). On the same criterion the following subhypotheses were tested:

4a. There will be no significant interaction of sex with VEG participants' and control subjects' scores.

The F-statistic of 0.88 for the interaction of sex with treatment group obtained from the multivariate analysis of variance of post-test scores was not significant at the .05 level of confidence. Further investigation of

TABLE 12

MEANS AND STANDARD DEVIATIONS FOR EPI-2 POST-TEST SCORES

Group	N	Mean	S.D.
Experimentals	200	1.9799	1.9898
Controls	222	2.0625	2.2079
Blacks	123	2.1855	2.0015
Whites	299	1.9565	2.1476
Males	200	1.7750	1.9478
Females	222	2.2466	2.2193
Eighth graders	157	1.9618	2.0534
Tenth graders	134	2.2388	2.1562
Twelfth graders	131	1.8702	2.1209
Pre-tested	211	1.8774	1.9138
Nonpre-tested	211	2.1706	2.2781
White Controls	160	2.1063	2.3083
Black Controls	62	1.9365	1.9582
White Experimental	139	1.7754	1.9446
Black Experimental	61	2.4426	2.0292

TABLE 13

ANALYSIS OF VARIANCE OF EPI-3
POST-TEST SCORES

Source	DF	Sum of Squares	Mean Square	F Value
Regression	7	476.7774	68.1110	2.0732*
Error	414	13600.8362	32.8522	
Corrected Total	421	14077.6137		

Source	DF	Partial SS	F Value
GR	2	26.7851	0.4076
Group	1	228.6439	6.9597**
Pre-Post	1	72.2452	2.1990
Race	1	209.7547	6.3847*
Sex	1	6.5005	0.1978
Group x Race	1	128.2917	3.9051*

*$p < .05$
**$p < .01$

this interaction in the univariate analysis was, therefore, not performed. The null hypothesis was supported.

4b. There will be no significant interaction of race with VEG participants' and control subjects' scores.

The F-statistic of 3.90 for the interaction of race with treatment group was significant at the .05 level of confidence. White experimental subjects (VEG participants) scored higher than black experimental, white control, or black control subjects. The null hypothesis was rejected.

4c. There will be no significant interaction of grade level with VEG participants' and control subjects' scores.

The F-statistic of 1.59 for the interaction of grade level with treatment group obtained from the multivariate analysis of variance of post-test scores was not significant at the .05 level of confidence. Further investigation of this interaction in the univariate analysis was, therefore, not performed. The null hypothesis was supported.

4d. There will be no significant interaction of pre-testing with VEG participants' and control subjects' scores.

The F-statistic of 1.48 for the interaction of pre-tested status with treatment group obtained from the multivariance analysis of variance of post-test scores was not significant at the .05 level of confidence. Further investigation of this interaction in the univariate analysis was, therefore, not performed. The null hypothesis was supported.

Means and standard deviations of scores on EPI-3 for the five independent variables and for treatment group by race are reported in Table 14.

Differences Scores Analysis

Analysis of variance of the difference scores between pre- and post-testing for each criterion variable produced only one F-statistic related to treatment group that was significant at the .05 level of confidence. The interaction of treatment group with sex on the CMI produced an F-statistic of 6.32 significant at better than the .05 level of confidence. Females in the experimental group and males in the control group increased their scores from pre- to post-testing. Females in the control and males in the experimental group decreased their scores on the CMI from pre- to post-testing. A summary of the analysis of variance of CMI difference scores is given in Table 15. Means and standard deviations of scores for main effects and for treatment group by sex are given in Table 16.

Hypothesis 5. There will be no significant differences between males' and females' frequency of next steps taken after participating in VEG as measured by a self-report questionnaire.

The nonparametric analysis of variance of frequencies of "Next Steps" taken produced a chi-square statistic for each main comparison and for interactions. Summary of the

TABLE 14

MEANS AND STANDARD DEVIATIONS FOR EPI-3 POST-TEST SCORES

Group	N	Mean	S.D.
Experimentals	200	19.9045	5.3339
Controls	222	18.5938	6.1015
Blacks	123	18.5968	6.1432
Whites	299	19.4649	5.6189
Males	200	19.3000	5.7301
Females	222	19.1300	5.8430
Eighth graders	157	19.4076	5.6806
Tenth graders	134	18.9328	5.8762
Twelfth graders	131	19.3053	5.8400
Pre-tested	211	19.6415	5.3311
Nonpre-tested	211	18.7773	6.1877
White Controls	160	18.5500	5.9630
Black Controls	62	18.7937	6.4936
White Experimental	139	20.5725	4.9889
Black Experimental	61	18.3934	5.8060

TABLE 15

ANALYSIS OF VARIANCE OF CMI DIFFERENCE SCORES

Source	DF	Sum of Squares	Mean Square	F Value
Regression	8	802.2124	100.2765	4.1151**
Error	202	4922.2330	24.3674	
Corrected Total	210	5724.4454		

Source	DF	Partial SS	F Value
GR	2	166.6836	3.4202*
Group	1	138.8637	5.6987
Sex	1	74.7083	3.0659
Race	1	11.5661	0.4746
Group x Sex	1	153.8973	6.3156*
Grade x Race	2	193.6132	3.9732*

*p < .05

TABLE 16

MEANS AND STANDARD DEVIATIONS FOR CMI DIFFERENCE SCORES

Group	N	Mean	S.D.
Experimentals	97	0.1237	5.6904
Controls	114	0.1667	4.8113
Blacks	59	1.0339	6.0114
Whites	152	-0.1974	4.8583
Males	103	0.3786	6.0393
Females	107	-0.0741	4.3162
Eighth graders	79	1.4177	3.5177
Tenth graders	70	-1.3143	4.6111
Twelfth graders	62	0.1774	7.0304
Male Controls	55	1.2545	4.6357
Female Controls	59	-0.8475	4.7880
Male Experimentals	48	-0.6250	7.2482
Female Experimentals	49	0.8571	3.4940

chi-square values for "Next Step" frequencies is presented in Table 17. The obtained chi-square value of 0.03 for differences between sexes was not significant at the .05 level. The null hypothesis was supported. On the same criterion the following subhypotheses were tested:

> 5a. There will be no significant differences between blacks and whites.

The obtained chi-square value of 0.44 for differences between races was not significant at the .05 level. The null hypothesis was supported.

> 5b. There will be no significant differences between eighth, tenth, and twelfth graders.

The obtained chi-square value of 1.72 for differences between grade levels was not significant at the .05 level. The null hypothesis was supported.

> 5c. There will be no significant differences between pre-tested and nonpre-tested subjects.

The obtained chi-square value of 0.91 for differences between pre-tested and nonpre-tested subjects was not significant at the .05 level. The null hypothesis was supported.

> 5d. There will be no significant interactions between sex, race, grade level or pre-tested status of subjects.

The chi-square values for the interactions of grade, sex, race, and pre-tested status are also reported in Table 17. None were significant at the .05 level of confidence. The null hypothesis was supported.

TABLE 17

NONPARAMETRIC ANALYSIS OF VARIANCE FOR "NEXT STEP" RESPONSES

Source of Variance	Chi-Square
Grade	1.7212*
Race	.4369*
Sex	.0270*
Pre-tested Status	.9126*
Grade x Race	2.1753*
Grade x Sex	1.6934*
Grade x Pre-tested Status	10.8168*
Race x Sex	1.3009*
Race x Pre-tested Status	1.8736*
Sex x Pre-tested Status	1.6442*

*not significant

Of the 211 subjects who participated in VEG 187 completed the questionnaire on their "Next Step." Of these subjects 34 percent responded "Yes" to the Question "Have you had a chance to take your 'Next Step'?" Percentages of "Yes"'s and "No"'s by sex, race, grade level, and pre-tested status are reported in Table 18.

TABLE 18

PERCENTAGES OF "YES" AND "NO" RESPONSES ON "NEXT STEP"

Group	N	Yes	No
Blacks	60	32	68
Whites	127	36	64
Males	83	33	67
Females	104	35	65
Eighth graders	74	33	67
Tenth graders	59	29	71
Twelfth graders	54	37	63
Pre-tested	91	38	62
Nonpre-tested	96	32	68
All subjects	187	34	66
No response	24		

CHAPTER V

SUMMARY, DISCUSSION, LIMITATIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to investigate the effects of a Vocational Exploration Group (VEG) experience on the career development of eighth-, tenth-, and twelfth-grade students. Specifically, the study investigated five main hypotheses and twenty subhypotheses related to the career maturity attitudes, employability perceptions, and exploratory career behaviors of eighth, tenth, and twelfth graders as related to, or in the absence of, a two-and-one-half hour VEG experience.

Eighth-, tenth-, and twelfth-grade students in five high schools and seven middle schools in Alachua County, Florida, were randomly selected from school rosters to comprise an initial sample of 660 subjects. These students were randomly assigned within their schools to one of four groups. One of the groups was pre-tested, received the VEG experience, and was post-tested. A second group received the VEG experience and was post-tested only. A third group was pre-tested and post-tested but did not participate in any type of treatment. The fourth group was post-tested only and did not participate in any type of treatment. Subject assignment resulted in a Solomon Four-group research design.

Completed data were collected on 422 subjects from the original sample. Data consisted of scores on five criterion variables: career maturity attitudes (CMI), job personalization (EPI-1), movement toward job personalization (EPI-2), self-recognition of work potential and aspiration (EPI-3), and frequency of exploratory career behaviors (Next Step).

The study lasted four weeks. During the first week pre-tests were administered to the two groups randomly assigned for pre-testing. In the second week VEG sessions were conducted for those assigned to experimental groups. During the fourth week all subjects were administered post-tests. Only those subjects who had participated in VEG were administered the "Next Step" questionnaire.

Scores on the CMI and the three subsections of the EPI were totaled for all subjects. A multivariate analysis of variance was performed on post-test scores for these four criterion variables to test for differences between experimental groups and to test for effects of sex, race, grade level, and pre-testing. When the multivariate analysis produced an F value significant at the .10 level further investigation was done through separate univariate analyses of the post-test scores for each criterion variable. A similar analysis of difference scores from pre-to post-testing was also performed on the first four criteria for the 211 subjects who had been pre-tested.

These two analyses (of post-test scores and difference scores) produced two F-statistics significant at the .05 level or better related to treatment group. All other null hypotheses were supported.

The analysis of post-test scores produced an F-statistic significant at the .05 level of confidence for the interaction of treatment group with race on post-test scores of the EPI-3, a measure of self-awareness and clarity of job goals and alternatives. White experimental subjects scored higher than white control, black experimental, or black control subjects.

The analysis of post-test scores also produced an F-statistic approaching the .05 level of significance for the interaction of treatment group with race on the EPI-2. Lower scores indicate greater active movement toward personalizing job knowledge. Higher scores indicate greater passivity. Black experimental subjects had higher scores than black controls, and white experimental subjects had lower scores than white controls.

The analysis of difference scores produced an F-statistic significant at the .05 level of confidence for the interaction of treatment group with sex on the CMI, a measure of career maturity attitudes. Male control and female experimental subjects increased scores from pre- to post-testing. Male experimental and female control subjects decreased their scores from pre- to post-testing. An examination of the means of these groups indicates that the gains and losses are all approximately one point or less and may be considered statistically significant without being practically significant.

On the Next Step questionnaire subjects participating in VEG responded "Yes" or "No" to questions including whether or not they had had a chance to take their "Next Step" as decided on at the end of the VEG session. Thirty-four percent of the subjects reported that they had taken their "Next Step." There were no significant differences in frequencies of "Yes" responses between sexes, races, grade levels, or pre-tested and nonpre-tested subjects. There were no significant two-way interactions among sexes, races, grade levels, or pre-tested status at the .05 level of confidence.

Discussion

A VEG experience appears to have some effect on the career development of adolescents; however, the results of this study fail to indicate systematic relationships between a VEG experience and the criterion measures selected for investigation.

In the analysis of post-test scores, VEG participation appeared to have an effect on white participants' self-perceptions of possible job goals, job alternatives, and certainty of employability (EPI-3). White subjects participating in VEG scored significantly higher than black VEG participants and black and white control subjects. The effect of race on such a measure of clarity of self-perceptions may be due to the cultural situation of the southern black which includes more limited exposure to working role models, a more limited opportunity structure, and lower self-images generally as well as occupationally (Amos & Grambs, 1968).

The interaction of race with treatment group approached significance at the .05 level of confidence on the criterion of movement toward job personalization (EPI-2). Scores on EPI-2 are actually a measure of activity or passivity in answering questions about the world of work. Scores consist of the number of "Don't Know" choices selected by the subject in response to thirteen True/False statements about occupational choice. Black subjects participating in VEG scored higher than black controls; white VEG participants scored lower than white control subjects. It appears that while VEG may help white students clarify work concepts, black students do not receive this benefit and may, in fact, become less clear and less sure of themselves in the area of occupational choice. These relationships between race and treatment were not, however, maintained in the analysis of difference scores from pre- to post-testing. In that analysis no effect of race on treatment group scores appeared on any of the four criteria. This inconsistency indicates the need for caution in interpreting all results.

In the analysis of difference scores sex was found to have an effect on treatment group at the .05 level of confidence on career maturity attitudes (CMI). Female VEG participants and male control subjects increased CMI scores from pre- to post-testing. Female control and male VEG participants decreased CMI scores from pre- to post-testing. While statistically significant, however, the gains and losses in mean scores for these groups are all approximately one point or less and appear to have little practical significance.

The effects of relationships of factors other than those related to treatment group were not hypotheses investigated in this study. However, data on other interaction effects were available. Analysis of variance of difference scores produced a significant interaction of grade with race both on the CMI (F-statistic of 3.97

significant at .05 level) and on the EPI-2 (F-statistic of 2.98 approaching .05 level; actual $p < .066$). Interestingly, examination of means for these groups showed no differences between eighth-grade blacks and whites; differences were primarily the result of tenth and twelfth graders' scores. A possible explanation lies in the fact that integration of schools took place in this school district five years ago. Present eighth graders were the only group still in the primary grades at that time and, therefore, possibly less antagonistic toward racial differences making integration more beneficial to that group. Another explanation may lie in the increasing age of subjects from eighth to twelfth grade. The potential gap in career maturity between blacks and whites may become more visible as age increases and students get closer to the realities of the job opportunity structure. Such interpretations must be viewed with caution, however, since the same relationship of grade level and race was not maintained in the analysis of post-test scores.

Analysis of post-test scores did produce differences between races significant at the .001 level of confidence on the CMI (F-statistic of 36.86) in favor of white subjects, and significant differences between sexes at the .05 level of confidence on the EPI-2 (F-statistic of 5.83) in favor of females. It appears that whites exhibit more mature career attitudes and males exhibit more activity in career knowledge on the instruments used in this study regardless of treatment group. While effects of race and sex in this study are not systematic or conclusive, it is apparent that sex and race are important variables in studying career development of southern students.

Effects of the VEG experience itself appear to occur on criteria more specific to small steps leading up to attitude change rather than on braoder measures of attitudes themselves. In this study the practical difference in favor of VEG participants found on the first four criteria was on post-test scores of the EPI-3, a measure of self-perceptions and awareness. Self-awareness of employability might be considered one necessary step toward developing mature career attitudes. Such gains can be considered positive and realistic expectations for degree of effect of such a short-term treatment.

Another important factor in developing mature career attitudes is the amount of career exploratory activity in which a student engages. Analysis of the frequency of "Next Steps" taken produced a major effect of the VEG experience on the subjects in this study.

The "Next Step" was a personal career-related behavior which each VEG participant decided to engage in at the end of the VEG session as a follow-up to the group session.

Two weeks later participants were asked to complete a questionnaire about their "Next Step." Thirty-four percent reported that they had taken their "Next Step" within the two-week period. Neither sex, race, grade level, nor pre-tested status had any significant effect on the frequency of "Yes" responses.

Thirty-four percent positive responses compares favorably to the low percentages of active involvement (3 percent high involvement) in career planning and exploratory activities of eighth and eleventh graders reported by Prediger (1973) in the American College Testing Corporation's nationwide study of adolescents' career development discussed in Chapter II. This effect is also particularly positive since "activity" appeared to be one major index of career maturity as discussed in Chapter II of this study. VEG appears to have value in motivating students to engage in other career exploration behaviors. This motivational effect appears to hold true equally across sexes, races, and grade levels and regardless of whether subjects experienced pre-testing.

Limitations

This study as conducted has the following limitations:

1. The VEG experience lasted only two-and-one-half hours. This may be too short a time to effect change on

developmental variables such as the CMI. The criterion instruments used in this study may not have been sensitive to smaller changes more appropriate to a short-term treatment.

2. The instruments used in this study did not measure other variables in career development such as cognitive knowledge and problem-solving skills which might be affected by a VEG experience.

3. The research design and statistical analysis did not control for any effect due to school or group leader. Participating group leaders varied in their enthusiasm for group counseling in general and for VEG in particular. For some leaders motivation to participate in the study was the result of pressure within the school system to provide visible accountability on counseling practices rather than the result of positive attitudes toward VEG. Schools also differed in faculty attitudes toward students being out of class for guidance activities. One high school experienced great difficulty in contacting students for post-testing because of faculty resistance.

4. Administration of the instruments was standardized to an unknown extent. Original instructions for group leaders asked the leaders to read all instruments aloud while subjects were reading to themselves. The researcher was present in one high school during post-testing and

observed students reading the instruments by themselves without the group leaders also reading aloud. The extent to which this may have happened in other schools is unknown. The observed effect of race on treatment group scores in this study may, therefore, actually be an effect of reading ability.

5. The frequent effect of race in the statistical analyses may indicate that the instruments are culturally biased toward white subjects.

6. The large loss in sample size from original assignment to completed data may have biased the final results. This would be particularly suspect with those subjects who were eliminated because of erroneous answer sheets or because of absenteeism. Errors in coding answers may have been an indication of confusion. Absenteeism or scheduling problems may have indicated a lack of enthusiasm for the VEG experience. Because the data was eliminated these possible effects are not included in the data analyses.

7. The 211 subjects for which difference scores were available comprised a totally randomized sample of the same population as the total 422 subjects. The failure of the analysis of difference scores to maintain the same relationships found in analysis of post-test scores indicates the need for caution in interpreting any of the results.

8. Random selection of subjects for this study produced a sample of subjects who did not necessarily perceive a need or desire for such an experience. The lack of felt need may have prevented experimental subjects from reaping maximum benefit from the experience.

Recommendations

Specific recommendations arising from this study might include the following:

1. Other studies using VEG as an experimental variable should be conducted to clarify discrepancies in relationships found in the analysis of post-test scores versus the analysis of difference scores in this study.

2. Studies with VEG as an experimental variable should be conducted using instruments that are more sensitive to small changes in subjects. These might include, particularly, criterion measures that reflect self-perceptions and current behaviors as necessary precedents to attitude change.

3. Studies using VEG as a treatment should be expanded to include multiple treatments to test for possible differential effects of race and sex with different treatments.

4. Studies using VEG as a treatment variable should be conducted with differential group composition based on

sex and race, i.e., all black or all white groups, all male or all female groups. Possible inhibitions to group participation resulting from role stereotypes might be relaxed in similarly composed groups increasing the effect of the experience.

5. Further studies should control for different group leaders as a potential source of variance.

6. This study should be replicated with a population of students who have requested assistance with career planning. The random selection of subjects for this study meant that students were involved in the treatment who may have felt no need or desire for such information or assistance at that time. Such participant attitudes may have diminished the effect of the treatment. The VEG experience may be more productive for those who have requested it.

7. Since VEG can be considered a preparatory or motivating experience for further career exploratory activities, studies should be conducted combining VEG with such activities as continued group counseling, individual counseling, career classes, etc., to determine the effect of a longer and more in-depth treatment on subjects' career development.

Conclusions

A brief Vocational Exploration Group experience appears to have inconsistent effects on the career development of eight-, tenth-, and twelfth-grade students. Both sex and race play important roles in career development measures. Primary impact of VEG seems to be on smaller steps in self-perceptions and behaviors which may lead to attitude change rather than having a direct immediate effect on attitudes themselves. A major effect of VEG appears to be in motivating students to engage in individual career planning activities. Further research is needed to clarify the relationships of VEG, race, and sex to career maturity criteria.

APPENDICES

APPENDIX A

VOCATIONAL EXPLORATION GROUP TASKS

Short Program

1. Purpose of Group--Leader briefly explains purpose and structure of the group.

2. Introductions by Members--Members pair up for a few minutes of conversation, then turn back to the circle and introduce their partner to the rest of the group.

3. Million Dollar Story--Each member introduces himself by telling what he would do if he had a million dollars tax free.

4. Job Matrix--Leader uses chart depicting job functions--data, people, things--and job entry--train on the job, special skill, or college--to encourage discussion and stimulate members to think of jobs and place them in the appropriate cell.

5. Naming Most and Least Liked Jobs--Each member tells the group a top and a bottom job for himself--the job he would most and least like to have if circumstances were right.

6. Cool Seat--Each member in turn sits in the extra chair while other group members give him their impressions of a top and a bottom job for him.

7. Response to Cool Seat--Leader facilitates discussion on member's feelings and thoughts during and about the Cool Seat experience.

8. Job Inventory Part I--Members complete section of the Job Inventory as a record of their thinking of jobs for themselves at that point in the group. Each job listed is assessed in terms of Job Function and Entry Level.

9. Wall Posters and Pictures--Group members generate lists of jobs and place them on a chart under the appropriate job function category. Memory and pictures are used to stimulate thinking.

APPENDIX A (continued)

10. Job Information Booklets--Leader distributes booklets, explains contents. Each member finds five more jobs not listed on charts and records them in the appropriate category on the wall chart.

10 Minute Break

11. Job Satisfiers--Leader introduces concept of satisfaction derived from work for discussion. Members select most important, least important, and a middle job satisfier for themselves from stimulus chart.

12. Interest-Skills--Leader introduces idea of interest-skills as job demands for discussion. Members select most important, least important, and a middle interest-skill for themselves from chart.

13. Jobs and Training--Members name jobs for themselves that they would most and least like in categories of "need more training" and "have enough training."

14. Job Inventory Part II--Members complete section II of the Job Inventory with jobs that reflect their thinking in the group at this point and mark each job listed in terms of its job function, job entry level, satisfiers possible and interest-skills demanded.

15. Job Choice Summary--Members name a job that seems to meet their needs in all areas of job choice discussed and use the summary chart to describe how their choice fits them in the areas of job function, entry level, satisfiers, and interest-skills.

16. Expanded Choice--Each member names three more jobs that might meet his needs in each of the four choice areas.

17. Next Step--Each member decides on his goal area and with the assistance of other group members decides on a specific next step toward that goal. Members write what they will do, how they will do it, and when they will do it.

18. Closing--Members reread their "Next Step" for rest of group to react to and/or make additional suggestions. Arrangements are made for any follow-up meetings.

APPENDIX B

EMPLOYABILITY PERCEPTIONS INVENTORY

Directions: This is a survey of how people look at the world of work. I am going to read some statements to you and I want you to answer Yes, No, or Don't Know to each statement. This is a sample of what the questions will be like:

	Yes	No	Don't Know
Mechanics work with tools and machines.	___	___	_____

Please answer Yes, No, or Don't Know. Do you understand what I want you to do?

			Yes	No	Don't Know
I.	1.	Jobs demand more skills than interests.	___	___	_____
	2.	Most people could do three or more jobs and would like them equally well.	___	___	_____
	3.	There is one right job for a worker.	___	___	_____
	4.	Gaining friends and teamwork are reasons why people work.	___	___	_____
	5.	Some jobs give no real satisfaction.	___	___	_____
	6.	Good pay will make a worker happy.	___	___	_____
	7.	Except for skills, jobs make similar demands on workers.	___	___	_____
II.	8.	Nurses work with people; bookkeepers work more with things.	___	___	_____
	9.	All workers need supervision to be more distant.	___	___	_____
	10.	Cab drivers and cabinet makers gain craftwork satisfaction.	___	___	_____
	11.	Plumbers work more with things; airline pilots more with people.	___	___	_____

APPENDIX B (continued)

12. Grocery clerks need interest and skills in numbers; personal relationships are more important for court reporters. ____ ____ ____

13. Close supervision is a worker satisfaction. ____ ____ ____

III. Directions: Following are some statements. Mark in the box on each statement that indicates how true the statement is for you. Mark as follows: 5 - Very Sure; 4 - Sure; 3 - Fairly Sure; 2 - Uncertain; 1 - Don't Know.

	Very Sure	Sure	Fairly Sure	Uncertain	Don't Know
Example: I know what job I want.					

Put an X in the box that is the closest to how sure you are that the statement is true for you.

	Very Sure	Sure	Fairly Sure	Uncertain	Don't Know
14. I know what interests and skills are demanded by the jobs I want.					
15. I can name three jobs for which I have interests and skills.					
16. For the job I want, I can name three skills required.					
17. I know three jobs I would want that require more training.					
18. People I know would agree with my choice of a job.					
19. Of the jobs that I want which would require more training, I know which one I would like most and which I would like least.					

APPENDIX C

REPORT ON NEXT STEP

Name ______________________
Grade ______________________
Group Leader ________________

1. Two weeks ago you participated in a Vocational Exploration Group. At the end of the group you decided on a "Next Step" to take. Do you remember what your next step was going to be? (Circle) YES NO. If so, write it down here.

2. Have you had a chance to take your "Next Step?" (Circle one) YES NO If you said "yes," write here what you did and what happened. If you said "no," could you list some of the reasons why you have not been able or wanted to take your "Next Step"?

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BIOGRAPHICAL SKETCH

Ellen Gail Cross was born in Winter Haven, Florida, on June 20, 1945. As a child she traveled extensively in the United States and Europe with her father, a career Army officer. She graduated from Dreher High School, Columbia, South Carolina, in June, 1963. She received the Bachelor of Arts degree in English literature from Duke University in 1967, and the Master of Arts in Teaching with an emphasis on secondary school English from Emory University in 1968. From 1968 to 1971 she taught language arts in the public schools of Georgia and Maryland at the seventh-, eighth-, and ninth-grade levels. In 1969 she married Robert Scott Cross. In 1971 she began work toward the Specialist in Education degree in guidance and counseling at the University of Florida. Upon receiving this degree in 1973, she entered the doctoral program in guidance and counseling at the University of Florida and also began working as a school counselor at Howard Bishop Middle School in Gainesville, Florida.

Dr. Cross is currently employed as guidance coordinator in career education for the Alachua County school system, Gainesville, Florida. She is a member of APGA, ACES, ASCA, FPGA, and FASCA and is a certified trainer in VEG.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Robert D. Myrick, Chairman
Professor of Counselor Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Joe Wittmer

Joe Wittmer
Professor of Counselor Education

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